

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

STAMPED.....SIXPENCE.
UNSTAMPED..FIVEPENCE

iders, and if he does not do so in a fair
should be dispensed with. Contrar

AUG.

printed statements immediately after The fortnight grammar are no Mining Journal's "and" bear repeat to waver, however, as the mine's replies to attacks in Mining Office

DEVELOPMENT

Sir,—You will see the Croycroft road from Wicklow. The railway people Croycroft road, a branch of those mining Croycroft royalties similar also. The personal inspection (for example), of high prices of American wells. Some of them have most fine, whose chance have occasion to next Monday. And the selection soon to be about some are included Dublin, Aug. 26.

TIN

Sir,—Having survey my attention by Capt. Hancock best that I ever where machine there, when, if I hand-rack the tin band-rack with tin Aug. 26.

SIR,—A great nearly every can't attend searching account of the accounts nearly every or question as to these present or in the haunts these gentlemen have extensive information regarding your shares or may suit them ignorance as to them or idle. B generally, when \$2000, per acre, in 1858, they acquired shaft, when price of the old mine was in sight to recent discovery. Are the shareholders If so, it is public general I am aware well to any one holders let us know what is become

GREAT

Sir,—My love alternative to the was merely a shaft which has been four shafts seen correct in his I had the man before I left to do the discovery was sunk a few feet detected a claim shaft, which western shaft \$9, on the couch a bathorn or tving of the underlying cause consequently, dig out the working cause plain said was written when I entered water being in ward towards and he saw piled the line of road proposed five hope, as well attention to the present ap Now I want to be done with But I beg to say before this time I am aware the subject of the conjuncture of the country pay calls with the subject : Blinded to suppose be on the mine Devoynage,

SIR,—If you four valuable themselves to that of person who the mining industry of the United States. I am sorry motives, nor to give a partial As one of Alfred Minns' twenty years ago No one was more, clear his Their fault apparently Mr. Crease's interest in the iron or wood safe working place of near the river, and afterwards strain upon the strength of 26,000,000 lbs. the rods strong the rods strength experience proved The form and the prolated simultaneously fault which transcendent need of an existence or work these That iron

buildings. There was also some little inconvenience experienced in the month of April, when many of the men remained at home for the purpose of tilling their ground.

PRODUCE OF ORE.—We are sorry to notice that although our returns of ore have much exceeded our estimates, yet its produce for silver has considerably decreased. Our estimate of its yield at the date of the last report was 33 cwt. per ton of lead, whereas it has only afforded an average of 21½ cwt., making a difference of 11½ cwt. per ton, value 31. 3s., or about 2070s. on the total quantity of ore raised. This has in some measure arisen from a decrease in the supply from the western portion of the concession; but it is also, to a certain extent, to be accounted for from the fact of the ore being generally less argentiferous in the run of ore ground now worked than it was in the shallower levels. It may, however, be remarked that a slight increase in the produce of silver has been recently observed. In addition to the falling off in the yield of silver, the price of lead has throughout the year been continually declining, and its average value has in consequence only amounted to 20s. 10s. 6d. per ton, against 22s. 3s. 6d. in the previous year. This difference of price has diminished the value of the lead produced to the amount of 1090s. It follows from the foregoing facts that our total annual produce has, from the causes specified, been affected to the amount of 31540s.

FINANCE.—The statement of liabilities furnished us on taking the management of the undertaking, and given in the last report, has been found erroneous, inasmuch as, that instead of the sum of 2000s. owing to various merchants, it has been discovered to have amounted to 3490s. 4s. 1d. This difference arose from the omission of many old outstanding accounts, which appear to have escaped the observation of those by whom the statements were furnished. The mine cost during the year has amounted to 9545s. 10s. 6d.; for which 34,500 cwt. of ore, or 17½ tons, of ore were raised. The smelting cost for the 12 months has amounted to 5658s. 6s. 9d. The mine account showed a profit of 3016s. 13s. 10d. This profit is not as large as was anticipated, and as would have been obtained had the ore continued to afford their average yield of silver, and had similar prices been realised for lead in 1858 as were current in 1857. If this had been the case the accounts would have stood credited with a profit of 6446s. 17s. 11d. instead of 3016s. 13s. 10d. The profit realised has been made by increasing the returns, which has necessarily led to the employment of a larger number of hands than would have otherwise been required.

NATURE OF INTENDED OPERATIONS FOR THE YEAR ENDING JUNE 30, 1859.—Carter's and Michael's shafts will be deepened to a 20 fathom level, and galleries driven to connect the two points; levels will be extended eastward of Carter's towards Caroline shaft, and west from Michael's shaft, towards the Turken sink; and rises will also be made as may be found expedient, and in addition to rendering a steady return of ore, it is intended to increase the reserves of productive ground. Should either Carter's or Michael's shaft unwarrantably western mine this part of the undertaking will be vigorously attacked, and every means taken to thereby augment the returns. Some further changes will likewise be attempted in our smelting operations, with a view of reducing the cost; and it will be our endeavour to relieve the undertaking as much as possible from its present heavy dead charges. During the past year our exertions have been successfully directed to the reduction of expenditure, but in spite of all our efforts we find it impracticable to bring the present monthly cost below an average of 1550s.

PRESENT APPEARANCE OF THE UNDERTAKING.—As a detailed description of the various points now at work underground may probably confuse those unacquainted with mining, we would remark, by way of summary, that the appearance of the courses of ore is very satisfactory; that on the Dornegan continues to be as rich as at any period since the workings were commenced, whilst the recent discoveries of ore in the forebush at the deep adit, and in the 10 fathom level, east of Carter's shaft, are not only valuable in improving the resources of the undertaking, but also affording evidence of the continuous nature of the deposits. We, therefore, believe that we are safe in estimating the monthly returns for next year at 200 tons of 50 per cent. ore. The average monthly quantity returned for the year ending June 30, 1858, exclusive of July, 1857, was 150 tons, which has enabled us to make a small amount of profit. The capital account must, however, close with the end of June last, and many items which will occur, and ought to be charged to this account, must in future go to the working expenditure account. It must also be remembered that the mines are changeable with the period of their making a profit. In the present year, we have been so fortunate as to have had a constant care to conduct the undertaking as not only to increase the yield of ore, and confine the expenses to the lowest possible limits, but also at the same time to develop the resources of the property, and lay open new ground as a reserve against future contingencies. In this endeavour we have been most ably seconded by the officers at the mines and smelting works, to whom we take the present opportunity of expressing our thanks for their co-operation. As long as the shareholders may continue to honour us with their confidence, no exertions will on our part be wanting to secure the prosperity of the undertaking. It must, however, be admitted that the concern presents certain characteristics incident to its geographical position which no skill or effort can entirely remove, although the completion of the railway from Cologne to Wissen, which will probably be effected within the next two years, will materially lessen many of the disadvantages under which the smelting department in particular is now labouring. We are fully aware that it is imperatively necessary so to work the mines as to at least meet the interest on the debenture capital, but we trust that during the financial year, with an improved market for lead, and a continuance of ore-bearing ground, we shall in addition to this be enabled to realise a certain amount of profit for distribution among the original shareholders.—**PHILLIPS AND DARLINGTON.**

Colonel Hisslop wished to know whether they might not get into some legal difficulties by holding these meetings, and whether there were any native shareholders who might attend at Cologne and upset any proceedings they might adopt?

The CHAIRMAN replied they would not get into any legal difficulty, and the native shareholders were so few that they could not carry anything against them. In answer to a question, the CHAIRMAN said they should not go to the mine, nor would any other members of the council when at Cologne, as they considered it interfered with the works, was expensive to the company, and did no good.

Colonel Hisslop considered the undertaking in a very satisfactory condition at present. The CHAIRMAN said the accounts were much better, because they showed a profit, and was the first time they had done so. He regretted that upon the present occasion he could not announce a dividend, but he hoped to do so before long. It appeared from the accounts that the value of the ore returned from the mines before Messrs. Phillips and Darlington took the management, in three years, ending June, 1857, amounted to a fraction under 10,000s., whilst the amount returned by them during the last year was upwards of 14,000s.; and that did not tell the whole tale, because the first month Messrs. Phillips and Darlington had the management there were scarcely any returns. As this was only a preliminary meeting, and not a legal one, he should not submit any resolution. The formal business would be conducted on Saturday at Cologne.

A SHAREHOLDER enquired whether exploring the western part of the mine would cause any additional expenditure for machinery?

Mr. PHILLIPS expected the eastern ground would drain the works; but if that should not take place, it would be necessary to put up machinery, although it was impossible for him to tell at the present time to what amount.

The report and accounts were then received and approved, and a vote of thanks to the CHAIRMAN and members of the council terminated the proceedings.

QUARTZ ROCK REDUCTION COMPANY.

An adjourned meeting of shareholders was held at the offices of the company, Old Broad-street, on Tuesday, Colonel KENNEDY in the chair.

Mr. VIAN (the secretary) read the notice convening the meeting. The CHAIRMAN said: Mr. Squire had made experiments on a certain portion of the ore; he does not assay it, but only prepares it with certain chemicals before it is roasted, one of the plans adopted being to pick the ore. Mr. Mitchell had been assaying the stuff supplied by Mr. Squire, which was classified in three ways—Sample A, yielding 16 dwts. 8 grs. per ton; B, 6 dwts. 10 grs. per ton; C, 1 oz. 2 dwts. 20 grs. He did not think they could be led astray by Mr. Squire. He congratulated the meeting that they had Mr. Clement in attendance, who had had very great experience in such matters. He (the CHAIRMAN) was extremely anxious not to deceive them; but if they got 6 ozs. per ton, they would be rich men indeed. Mr. Squire had great confidence in his invention, but they could only take his word for it; however, they had this fact, that Mr. Squire did not want any sum down, or any distinct salary, as he only asked for a royalty dependant upon the success of the undertaking, which no reasonable man could refuse, and that royalty was to be payable on the yield, provided above 2 ozs. to the ton; and as a large shareholder, he should be willing to allow a large percentage upon all obtained beyond that quantity. The property would pass into the hands of the judgment creditors upon Oct. 6 next, unless they could remit 1000s. by the next mail; but they had six months from Oct., during which they would have the power, if they possessed the means, of paying off the debt, and thereby continue in possession of the property. It was difficult, if not impossible, to arrive at a distinct opinion in reference to Mr. Squire's discovery; but it would appear to be worth giving it a trial, as the only chance left by which the total loss of the property may be averted, and the nature of his offer proves that at least he himself has unbounded confidence in the certainty of obtaining about successful results. The treatment of the quartz consists of two processes, which would not be attended with any considerable cost. First, the application of certain chemical elements, the nature of which, of course, he keeps to himself, but the cost of which he asserts cannot exceed 5s. per ton, with the assurance that the elements required can be procured to any extent in California. Secondly, in the operation of roasting the quartz to a limited extent, after the application of the chemicals, a small kiln, at a cost of about 15s., would suffice for that purpose, if the establishment should not already be provided with one that would suit. If they made the agreement with Mr. Squire, they might recover the property, and he agreed to go on with their money paying expenses, which would not require more than 200s., or 300s., and he was willing to contribute a large portion of it himself. Mr. Clement considered it desirable that 2 cwt. more of the quartz in this country should be obtained, and that Mr. Squire should operate upon half by his method, and the other half by some assayer with the ordinary amalgamators, when if it was found that Mr. Squire obtained 1 or 2 ozs. more to the ton, there would be something in his invention. Mr. CLEMENT said he had had much experience in California, and since then he had followed every one that had any new system of extracting gold, with a view of testing it; and Mr. Squire's plan met from him a great deal of approval. He was for 27 years in Mexico, where they always pick the ore; and when they selected about one ton out of every four. He was careful in forming his judgment, but he thought they would do well in giving Mr. Squire a trial, and he (Mr. Clement) would be happy to assist him, although not a shareholder, which showed the faith he had in it. He had never seen in any other country quartz thrown into the mill without picking, which was the practice in California. The advantage of picking must be evident, from the fact that the 700th part of a grain in a cubic inch of quartz would give 3 ozs. to the ton.

The CHAIRMAN remarked that they had also the advantage of Mr. G. R. Johnson being in attendance, well known as one of the first assayers in this country, and perhaps he would favour them with his opinion on the subject. Mr. JOHNSON would hardly have thought any pay would have put the value of the quartz into the mill without picking. If Mr. Squire succeeds, the method is calculated to save a great quantity of gold. He agreed that the plan proposed was the best method of testing the invention.

The CHAIRMAN considered, from the observations of Mr. Clement and Mr. Johnson, that it was desirable to get 2 cwt. more of the quartz.

Mr. VIAN, in answer to a question, said the average yield at the mill in California was ½ oz. to the ton.

Mr. SQUIRE said the last parcel he had was not a first-class ore; in one stone he broke he found three or four distinct formations of quartz. He contended that where they found metallic oxide in the quartz they found gold. In California they obtained 1½ oz. per ton from the same quartz that produced 60 ozs., and in some cases 120 ozs. The fact was, that one portion of the quartz was very rich, and the other contained very little gold. The advantage of the classification of the stone was proved by the assays produced at this meeting; for if they had been thrown altogether they would not have had 6½ ozs. per ton; clearly establishing the fact that the quartz should be properly selected before it is operated upon. He (Mr. Squire) would say, if they had much ore similar to the piece he now produced, he would return them all the money they had spent in eighteen months. There were disputes between scientific men whether gold was in the oxide; but the question was the commercial result to be obtained. If he was to depart from the principle of selecting he should be departing from the commercial result. By his method it not only brought the gold into a globular state, but there were other great advantages, the quartz was softer, and more easily operated upon, and it was freed from the arsenical and sulphurous part of the ore.

Lieut. WATSON, R.N., said there was a quantity of the ore at the Crystal Palace, the company having purchased it with a view of forming a geological museum, and Mr. Squire could go over and select what portion he pleased. He concluded by moving a resolution that 2 cwt. of the ore should be obtained from the Crystal Palace, and that Mr. Johnson operate upon one-half and Mr. Squire upon the other, in order that the quantity of gold contained in it may be ascertained.

Mr. HASTON seconded the resolution, which was carried unanimously. The meeting was adjourned for a week to receive the reports. A vote of thanks to the CHAIRMAN terminated the proceedings.

SORTRIDGE CONSOLS MINING COMPANY.

A general meeting of shareholders was held at the London Tavern, Bishopsgate, on Thursday, Mr. ORR in the chair.

Mr. COLEMAN (the secretary) read the notice convening the meeting, and the minutes of the last, which were confirmed. The report of the committee, and statement of accounts, were read, from which the following is condensed:—

Since the last general meeting good progress has been made in developing the mine. An 80 fm. level has been reached, and drives commenced east and west. The lode in the bottom of the shaft is promising, yielding good stones of ore, and the country of a conical nature, and easy for progress. The 74 fm. level east has intersected the cross-course, and the 50 east, on the south branch, is also passing through the cross-course. The agents' reports lead them to hope for improvement at both these points, on meeting with the lodes on the other side. In the 50 west the lode has been met with beyond the cross-course; it is now 3 ft. wide, and the country most congenial.

Mine cost and merchants' bills	£1919 11 9
Dues	152 15 4
Income tax	24 0 1
Stamp duty	0 10 0
Manager's and secretary's salaries	63 0 0 = £2160 0 2
Ores sold	£1741 15 2
Landlord's property tax received	3 3 8
Interest	9 6 6 = 1754 5 4

Balance, being loss on four months' working.....£ 405 14 10

GENERAL BALANCE-SHEET.

Balance in favour last audit.....£1590 0 3

Loss as above.....405 14 10

Balance in favour of adventurers.....£1184 5 5

The SECRETARY next read the report of Capt. Richards, as follows:—

Aug. 25.—I have carefully surveyed this mine, and I now beg to hand you my report of work accomplished during the past four months, for the meeting fixed for to-morrow. Hitchen's engine-shaft has been sunk 6 fms. 4 ft., making a total of 14 fms. below the 74, 2 fms. being allowed for a fork; the lode will average 3 ft. wide, composed of capel, quartz, flookan, and occasionally stones of ore. During the last 12 ft. sinking the lode has taken a more perpendicular direction, and it contains more quartz, with mundle, and good stones of ore; and altogether it is presenting a more healthy appearance. At the 86 the top and trip lode have been cut, timbered, and in every respect made complete. The top lode at the 84 has been removed, and replaced at the 86. The drawing guides are brought down to the 86, and the shaft is again set to be sunk, by nine men, 10 or 12 fms. certain, as it may be thought most advisable hereafter; and sinking will be in full operation as soon as the permanent pitwork is fixed at the 86, which will occupy a fortnight from this date.—Hitchen's Engine-shaft: The 86 has been driven 2 fms. east; the lode is small, 6 in. wide, and unproductive, being composed entirely of flookan. The 86 has been driven west 4 ft.; the lode is 3 ft. wide, containing quartz, mundle, capel, and stones of ore. The 74 shaft has been extended 17 fms. 4 ft.; the lode has been extended east to the south, and in places a little ore. The drive has just passed through the cross-course, on the eastern side of which the lode is not yet seen, but the drive is being extended in a northerly direction for intersection thereof; and as its being met with we hope for an improvement. The 74 has been driven west 7 fms. 4 ft.; the lode will average 2½ ft. wide, and is composed of capel, mundle, quartz, and occasionally a little ore. This drive is suspended to admit of a rise being put up in the back thereof. It is up 6 fathoms, but the lode so far is unproductive. The 62 has been extended east 12 fms., and the lode is large, 5 ft. wide, containing capel, mundle, quartz, and a little ore. In the present end the lode is of the same general character, but having reached to within a short distance of the eastern boundary driving is suspended. A rise has also been put up 5 fms. in the back of this level (the 62) against, and communicated with Jeffrey's winze, sunk from the 50 above, where the lode yielded stones of ore. The 62 has been driven west 7 fms., and the lode will average 2½ ft. wide, composed of quartz, mundle, flookan, and a little ore in places; the lode in the present end is 18 in. wide, containing mundle, peach, quartz, and a little copper and lead ores. The rise which was being put up in the back of this level at the last meeting has since been communicated with the level (the 50), and the lode for the whole height will average 2 ft. wide, composed of peach, mundle, quartz, and in places a little ore. The 50 has been extended east to the south, and in places a little ore. The drive has just passed through the cross-course, on the eastern side of which the lode is not yet seen, but the drive is being extended in a northerly direction for intersection thereof; and as its being met with we hope for an improvement. The 74 has been driven west 7 fms. 4 ft.; the lode will average 2½ ft. wide, and is composed of capel, mundle, quartz, and occasionally a little ore. This drive is suspended to admit of a rise being put up in the back thereof. It is up 6 fathoms, but the lode so far is unproductive. The 62 has been extended east 12 fms., and the lode is large, 5 ft. wide, containing capel, mundle, quartz, and a little ore. 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some, somewhere about the 50 fm. level, when I think important discoveries may be made. I then went up a rise on the south side to the 20 fm. level; here the small cross-cut may be seen; its effect has been to dislocate both lodes, which not only form a junction, but actually cross each other at an angle of about 20 deg.; this phenomenon is perfectly distinct and well defined in the roof of the levels—the south lode, containing the muddy bands, being to the north, and the north lode, which contained the good appearances, is on the south. At this point a rise has been put up, on a good bench, in the 20 fm. level, east of Brett's shaft, on the south lode, a winze is sinking by two men, at 12s. in 17. for lead, and 11. per ton for blende—a good lode, and likely to be a good one in length. The lode standing here is quite so; the back has been stopped for 10 fms. in length. The lode is a good one, consisting of blende, lead, and good stone, and strings of the best in this part of the mine, giving evidence of copper in depth, precisely as at All Saints, Stray Park, and other deep copper mines. This spot decided me in my opinion as to the produce of the mine in depth. Copper ore is found dispersed throughout the entire lode. This ground will be worked at an easy rate when the conveniences of present preparing are complete; it may be considered as reserved discoveries. The lode in the present end is split by a horse of ground; the branches, as a matter of course, are small, but the main or footwall part of the lode is on the south or footwall. When the tail, or other end of horse of ground, is reached ore will undoubtedly be again found. The lode here is not disturbed by a slide or cross-cut, this being only one of the adventitious circumstances to which all lodes are liable, and is rather a good indication of the lode's position. It is proposed to drive a few fathoms on this lode, and cross-cut to the shaft on the main lode, which is only 6 or 8 fms. south, when the lode, as before said, may be worked to advantage.

In the 40 fm. level, at Austin's shaft, the men are sinking a few feet for the bearing column, to receive the new set of lifts. A cross-cut south (called Austin's) of 7½ fms. reaches the main lode; it has been driven on east, and is a very large lode; the character of it is changed, being now hard and capely. For 6 fms. long it is coarse and unproductive. The underlie is altered also, being more horizontal than usual. After continuing in this state the above distance, it resumes its former appearance and character, and has been driven on for 15 fathoms beyond the change. This is all tribute ground (reserves). The present end contains a promising lode, 18 in. wide, worth 4 cwt. of lead per fm., with a little blende. A level has been driven north-east for a few fathoms on a branch of the lode by way of experiment, but not continued. A cross-cut has been made south to reach the south lode, but it has not yet been met with; indeed, it cannot be expected for 2 or 3 fms. further; this should by all means be continued, as it is more than probable the south lode will be metalliferous as well as the main lode, and has been driven of Austin's shaft, at No. 1 cross-cut to the main lode, it is found 3 ft. at 8 fathoms west of Austin's shaft. The present end is a fine lode for blende, with spots and strings of copper ore with lead; it has been driven on east 7 fms.; the backs have been stopped away the whole length. No. 2 cross-cut has been made from the north part of the lode to the south 10 ft., through a horse of ground; the lode here is small. A level has been extended east 7 fms., where there is a good branch of lead and blende. A winze has been sunk to the 40 fm. level from No. 2 cross-cut; the lode improves as it descends, and has opened out good tribute ground. This is a useful and well considered piece of work; it displays sound judgment and forethought, and serves for discovery and for ventilation.

In the back of the 40, at Scaddon's rise, is as fine a lode as can be seen, 3 feet wide, nearly all blende, lead, and quartz, with spots of copper—the lead in lumps of 3 or 4 ozs. downwards, the quartz friable and kindly. This lode seems likely to hold on for some distance; its character is sufficient to warrant such a supposition. I estimate it to be worth 4 cwt. of lead and 3 to 4 tons of blende per fathom. A very large quantity of mineral may be raised from this place.

Thence I went to Glasson's winze, in the 50 fm. level, which is now just holed; lode worth 1 ton of blende per fathom. Thence down the footwall to the 50, which has been driven 72 fathoms east from King's shaft—the lode poor for a long distance. When a change of ground takes place the lode becomes productive and large. A pitch of 2 fms. long in the backs here may be let at a good tribute, and may probably open out in size as it is risen on. The end at present is poor, being at the point of the horse, as seen above.

In this level is a slide of great extent, which dips rapidly west: 10 fathoms from this is another slide, parallel to it, but not so large; these I think will have a most important effect on your lode, in the 40 fm. level, the ore of blende and lead here has been found over the slide. I think it will be found that these will gradually wear out, and that you will have a preponderance of copper as you descend, and that the Boling Well will eventually be found a copper mine. In making this observation I reason from analogy and facts, and not from mere hypothesis.

I then went down the footwall shaft to the 60, east of King's shaft, on the main lode. This level is much more impregnated with iron oxides (favourable evidence for copper) than the lode has shown in any of the upper levels. The present end has been driven on a large footwall lode, 3 to 4 ft. wide, containing lead and blende, with copper spots. At 3 fms. from the end the lode appears to be split; to ascertain the fact, the captain put men to break down a portion of the lode, when it was apparent. A cross-cut is now being put out south, to see if there be not another lode standing still further south, of which I feel quite confident.

Thence I came back to the engine-shaft. A level has been driven west 14 fms. The present end is hard, wet, and poor. East, a level has been driven 15 fms. to the point of horse—lode split, but promising; the wall very much stained with iron. Under this I think you will meet with copper ore. The engine-shaft is very properly being sunk on the course of the lode, as it has been from the 40; it is now down 18 ft., below the 60. The lode in the bottom is large, and contains good tributes of blende, lead, and copper in strings, saving work, the copper coming in more plentifully.

I then ascended, and noticed the strata, as well as all the underground work, which is well executed, and in good repair, save a few ladder staves gone here and there. The engine-shaft being changed from the perpendicular will effect a great saving in cross-cuts, besides the advantage of proving the lode in its descent. No inconvenience need be anticipated in the arrangement of the pitwork, or any other underground operations.

REMARK.—After a careful examination of the foregoing is a detail, I cannot but be to the conclusion that the Boling Well Mine will prove to be a deep and lasting copper mine. The stratum is favourable to such a supposition, being now in the upper series of slate; the lodes being east and west are in the position for copper deposits, and not far apart. I look upon the lead and blende hitherto met with as merely the upper or surface indications. I firmly believe that beneath the slides alluded to the mine will be found to be cupiferous, and that the 80 fm. level will give you a preponderance of copper ore; the lodes are well-defined and continuous, though irregular, to which I have no objection. At the transverse junction I think it likely you will have a good mine probably for lead and blende, but this will not be deep enough for copper. A north and south cross-cut is said to exist at the distance of 20 or 30 fms. west; this should be driven for at one of the deeper levels, as this, in all human probability, will be found to be the lead part of the mine. It would have been impolitic to have done so before, for fear of the influx of water; now you are quite prepared for any emergency. I think this north and south lode will be found a lode, which is damming back the water of the lode east, and that when you cut it the increase will not be very great. The Boling Well Mine, in this respect, resembles the East Wheel Rose, Shepherds, and other mines where blende and lead, with copper, have been found on east and west lodes. The north and south cross-cut is said to exist at the distance of 20 or 30 fms. west; this should be driven for at one of the deeper levels, as this, in all human probability, will be found to be the lead part of the mine. It would have been impolitic to have done so before, for fear of the influx of water; now you are quite prepared for any emergency. I think this north and south lode will be found a lode, which is damming back the water of the lode east, and that when you cut it the increase will not be very great. The Boling Well Mine, in this respect, resembles the East Wheel Rose, Shepherds, and other mines where blende and lead, with copper, have been found on east and west lodes. The north and south cross-cut is said to exist at the distance of 20 or 30 fms. west; this should be driven for at one of the deeper levels, as this, in all human probability, will be found to be the lead part of the mine. It would have been impolitic to have done so before, for fear of the influx of water; now you are quite prepared for any emergency. I think this north and south lode will be found a lode, which is damming back the water of the lode east, and that when you cut it the increase will not be very great. The Boling Well Mine, in this respect, resembles the East Wheel Rose, Shepherds, and other mines where blende and lead, with copper, have been found on east and west lodes.

In conclusion, allow me to express my own, feeling confident the description will assure you, as well as myself, that Boling Well is a mine well worthy vigorous exertion and liberal outlay; nor can I take leave of the subject without thanking your captain for the readiness he displayed in pointing out every feature and part of the mine I requested to examine.

A HINT TO CAPITALISTS ABOUT TO INVEST.

DISPROPORTION IN THE VALUE OF THE STOCK AND SHARES OF SOME OF THE LEADING RAILWAY AND OTHER COMPANIES FROM SPECULATION, IRRESPECTIVE OF THEIR MERITS.

At the last half-yearly meeting of the Taff Vale Railway Company, at Bristol, a shareholder made the remark, that while they were paying 7½ per cent. dividend, and while emerging from a period of unexampled trial in the iron and coal district into, as it were, a new era, which was then become perceptible, their shares were quoted in the market only at 128, while the Vale of Neath, which had never paid more than 4 per cent., and this, he it is known, is but a third class line, and was now paying only 3½ per cent., had their shares quoted at par. And it was explained that the low price of their shares was attributable to the singular circumstance that they were not quoted on the London Stock Exchange at all, and never had been. Their shares were very rarely in the market, consequently few changed hands, and from want of business, necessarily, did not mark in the Official List published under the authority of the Committee. Connected with the same district, the iron and coal fields of South Wales, there is a certain other incorporated company, called "The Rhymney Iron and Coal Company," whose estate is, for the most part, freehold property, comprising (with what is held in lease) some thousands of acres, profuse in seams of iron ore and coal, and with works, machinery, and appendages, for their raising, manufacture, and shipment, almost unrivaled, now in full operation. The shares of this quiescent company occasionally, yet rarely, mark in the Official List of the London Stock Exchange, and the question has been again and again asked why it is so; and the same observations are as referable to the Taff Vale Company in this respect will equally apply to this company; for while the latter has been for years, and is now, paying a dividend of 5½ per cent. upon its capital stock, yet, strange to say, the present quotation in the London Stock Exchange is but 22, in other words 28 discount, and an investment at the current price of the day, would consequently confer a dividend of no less than 11 per cent. per annum. And this must go on increasing, for connected with their works, and as a most valuable adjunct, is the Rhymney Railway, only very recently opened for traffic, bringing them not only in close communication with the shipping port of Cardiff, but with Liverpool, Manchester, Leeds, and, in fact, all the midland counties, without break of gauge.

The railway is in substitution for an antiquated tramway worked by horse-power (in common with other companies), upon which very excessive tolls were imposed, and it also opens a communication for all the collieries and works along the valley, extending over 20 miles, and which now are become numerous and highly important only from the improved mode of transit; while, before, all being so far inland, were to a certain extent inaccessible and profitless. The coal trade of the valley is altogether a new feature, and will doubtless hereafter, when in full operation, form a considerable item in the half-yearly statements, from the increasing demand for anthracite or smokeless coal for steam navigation, and even in London it is now coming into favour for house consumption. Nor is this all. The Rhymney Company has been incorporated by Act of Parliament more than 20 years, and its subscribed capital wholly paid-up, and no shareholder is liable beyond the amount of his shares, contributes (with home consump-

tion) to the supply of rails for the Indian, Australian, American, French, Russian, Spanish, and other colonial and continental railways, now in course of formation, which of necessity must continue for many years.

Contrasting the foregoing with the prices of stocks and shares ordinarily dealt in upon the Stock Exchange, with the declared dividends for the past half-year thereon, it is difficult to comprehend by what rule or reason it is that the stocks of the leading railway companies maintain even their present position in the market. It appears a paradox, and is irreconcilable. The disproportion can only be accounted for by the fact of operations of a speculative character among the dealers, with nothing passing—no stocks, or shares actually changing hands, but only slips of paper, the effect being to give a fictitious or imaginary value to the thing dealt in, and little or no regard being paid to the merits of each individual company. What are denominated leading stocks and shares are "the speculative," for rarely is an official list taken up without observing numerous quotations in them. Herein the exception is the rule, and the converse of what is doing in the stocks and shares of companies which are not speculative, or wherein, on a purchase and sale, the stock actually changes hands by a transfer. For example, only extract from the published official list the quotations of a few of the speculative or leading stocks in daily active operation on the Stock Exchange (it would be invidious to name any one or more in particular), and, according to Cocker, at the price they are therein quoted, their value, if to be governed by the amount of dividend which is now in course of payment (which is adopted as the best criterion of value), is much overrated, or the stock and shares of those companies which are quiescent and stationary; and less in favour upon the Stock Exchange for speculative operations among the dealers, are quoted at sums considerably below their value, and the shares of the Taff Vale and Rhymney Company may be classed in the latter. The one is so antagonistic to the other that it is idle to attempt to reason upon it, and thus let extremes meet.

From the foregoing may be deduced that the enormous amount of capital now seeking investment, steady, sterling property and money's worth is neglected and forsaken; for the bent and inclination of the public now-days seem to be to rush in to invest in dubious and speculative undertakings with diminished and diminishing dividends, or with no dividend whatever; schemes whose accounts are so mysterious and confused (and intended, perhaps, they should be so), if not fallacious, as would take an accountant's life, and perhaps, his progeny for some time afterwards, to attempt to unravel—a perfect chaos—which must now be left to work itself out, until at last they find their cost, when too late, they have been tempted and lured to part with their money in exchange for that which has proved worthless, and thus (though unconsciously) been duped to foster and encourage the nefarious purposes of improvident directors and reckless gamblers. As a time is coming when speculation will once more become a life, let the public be on their guard; and we would exhort them to invest in those companies only whose position can be got at, and whose accounts are not tainted, but capable of being understood, examined, and tested. We need only call the attention of the public to the case of Seymour & Bagshaw, M.P., director of the Lake Bathurst Gold Mining Company, recently decided by the House of Lords, and the case Scott v. Dixon, a director of the Liverpool Borough Bank, tried during the present Circuit at Liverpool, wherein the plaintiff in each case recovered a verdict; thus establishing the fact that the reports of the directors of those companies, the purpose being to invite and induce the public to take shares, were fabulous, and founded on fraud.

IMPROVEMENTS IN COAL MINING.—No. I.

THE INTRODUCTION OF THE TUB, CAGE, AND GUIDE-ROD SYSTEM.

In the whole history of mining industry there is no chapter more interesting than that unwritten one which relates to the introduction of the "tub, cage, and guide-rod" system. It is impossible to exaggerate the importance of the change which the adoption of that system wrought, not only upon the coal trade generally, but especially, and in a marked manner, upon those by whose industry that trade has flourished and become great. For the first time since the invention of the Davy lamp, Science was brought to bear powerfully and successfully upon the means of preserving life and limb; and that which was considered an unenviable, because a most dangerous, occupation became more tolerable because infinitely less hazardous. A brief description of the state of things which existed prior to the change is necessary to a full comprehension of the benefits derived from its adoption. Within the recollection of the youngest mining engineer the produce of the pit was brought to the surface in what was called a corf, or corve. These corves, composed of wicker-work, in the shape of huge baskets, varied considerably in size and appearance in different localities. Originally constructed to hold about 10 pecks of coal, equal to about 3 cwt., they had for some time previous to their abandonment attained much larger dimensions, and were generally capable of holding 16 or 20 pecks, equal to 5 or 6 cwt. of coal, the size being regulated in a great measure by the height of seam, and by the strength and lifting power of the machinery employed to raise them to the surface. Besides being abominably ugly in appearance, corves were extremely inconvenient in use. They were high, and could not be filled without difficulty—they were fragile, and could not be emptied without danger of injury both to themselves and the coal which they contained. By depreciation—wear, tear, and ill-usage—they were constantly being broken and rendered incapable of containing the quantity of coal they were supposed to hold. Thence originated innumerable disputes among the workmen, and between the workmen and their employers, frequently ending in strikes, and consequent loss to all parties. The process of bringing the laden corves to the surface was a tedious and expensive one. The wicker-work of which they were composed acted as a sieve, or riddle, during their transference from the workings to the bottom of the shaft, and if the distance were long, the measure was invariably short by the time it reached its destination. Much breakage was occasioned in the journey through the mine, but in the ascent of the shaft the corf in swinging to and fro frequently struck so violently against the side as to shatter its contents, until they were small and almost useless. Arrived at the surface, the spring-hook by which the corf was attached to the rope had to be removed, and an empty corf substituted; and as during this operation the engine did not stop, the rope had sometimes begun to descend again before the empty corf could be affixed, and there was no alternative but to fling the corf in also, which, accordingly, went crashing and smashing down the pit, to the certain destruction of property of a very large amount annually. In addition to these inconveniences, the ascending and descending corves frequently came into collision; and sometimes the corf which was on its way to the pit's mouth would bring up that which should have descended, occasioning much trouble and confusion. Then there was a large expenditure every year that figured in the pay-books under the head of "corving," and which included the maintenance of "corving shops," the supply of fuel for the large fires required to dry the rods out of which the corves were fashioned, the expense of houses and firing for the "corvers," straw for covering the rod stacks, and various similar items, forming, in the aggregate, a most expensive establishment.

The means by which the miner descended to and ascended from his labour was of the most primitive and dangerous description. The rope, with its terminal chain, to which the corves were attached, formed the sole vehicle of his transit. To this he must cling, and run the risk of being severely bruised against the sides of the shaft, besides enduring the excoaration which the chain produced upon the legs and hands. The general practice in proceeding to or leaving the shaft bottom was for two men to sit, each with a leg in a loop of the chain; and frequently five or six boys would cling to the rope, one above another, trusting their lives to their capability of holding fast while the rope traversed a distance of 1600 or even 1800 feet.

Remedies for all these inconveniences had been the subject of much study among professional men, but no very satisfactory plan had been devised. About the year 1825 or 1826, Mr. Thomas Easton, of Hebburn Colliery, brought into operation an improved plan of conveying the coals from the workings to the bottom of the shaft, by placing the corves upon bogie wheel trams; but the difficulty of keeping the baskets upon the trams, and the objections of the boys employed as putters to continue their employment, compelled him, after a short trial, to fall back upon the former arrangement. A little later on, a very imperfect plan of raising the coals by means of "skips," and a kind of conducting rod, was partially adopted in some of the Yorkshire and Derbyshire collieries, where the pits are of little depth; and several eminent engineers from the North of England, accompanied by the Rev. John Hodgson, of Heworth, compiler of a *History of Northumberland*, visited a few of the mines for the purpose of ascertaining the applicability of the plan to pits in their own locality. Their impression seemed to be that, though the improvement was satisfactory at the

pits inspected, it was incapable of being adopted in the great northern coal field, where the thinness of the seams required shafts to be of an extraordinary depth, and the large demand for coal for exportation rendered it necessary to raise daily enormous supplies. From this it may be inferred that the new plan was slow in its operation.

What the most eminent engineers had failed in effecting was reserved for a viewer at South Hetton Colliery to accomplish. Mr. Thomas Young Hall, a gentleman of intelligence and long experience in connection with every department of colliery labour, in company with hundreds of his class, was an unwilling spectator of the working of the prevailing system—its expense, the loss it entailed, and the jeopardy in which it placed all who were engaged under it. He, too, in common with his fellows in every part of the kingdom, set about devising schemes for obviating the difficulties complained of, and after some years' patient labour he propounded a project of abolishing corves altogether, and substituting in their place a set of tubs of peculiar construction. A number of tubs of oblong shape, mounted upon wheels, were supplied to the workmen, which tubs being shallow, as compared with corves, admitted of being filled with great ease and dispatch. The contents of four of these were emptied at the bottom of the shaft into a large round tub, constructed to hold 1½ ton of coal.

This scheme of Mr. Hall's had been in operation about six months, and had excited a good deal of attention and much adverse opinion, when the proprietors determined upon having a thorough examination into every part of the colliery by professional men, and for that purpose employed Mr. Nicholas Wood and Mr. George Johnson. These gentlemen accordingly, early in the year 1834, visited the colliery, inspected the workings, and witnessed the operation of the new tub system. They reported as follows:—

"We have examined fully the new system of bringing coal to bank in iron tubs of 60 pecks each, and have given this important subject our most serious consideration. We find that there will be a saving in point of expense in the wear and tear of the timber in the shafts, and perhaps in the tubs themselves, as compared with the corves; but there appears to be many disadvantages connected with the use of them, which, in our opinion, more than counterbalance such savings.

We have already stated the great difficulty of screening the coal, by such a large quantity as 60 pecks being emptied upon one screen at the same time. The only mode of securing a proper separation of the slates from the coals, and of obtaining the coals in good condition, is the examination of each corf by the inspector at bank. This check compels the workmen to send their coals clean and in good condition; but the mixing three corves in one rendering detection impossible, we have no doubt it will be taken advantage of by the workmen, and be the means of the coals being sent to bank both foul and in bad condition. In addition to this, a considerable breakage of the coals is caused by emptying them from the small into the large tubs, and as the character of the coals so much depends upon their size, and their being well cleaned and screened, we deem this objection of the highest importance. And we find, likewise, that a great expense will be incurred underground in making the additional height required for the large tubs, and for the quays where the coals are emptied into them. The height of these roads will also be productive of great expense and inconvenience in working the coal. As a great proportion of coal lies to the dip of the pits, machinery will be required for bringing coals to the bottom of the pits; and as accidents will of necessity occur to the pipes, &c., of such engines, owing to the velocity with which the coals must be drawn upon the engine planes, the use of such large and unwieldy tubs is in that case very objectionable. We are, therefore, of opinion that the continuance of the system of bringing coals to bank in iron tubs of 60 pecks is contrary to the interests of the company."

Mr. Hall appears to have been somewhat dissatisfied with this report, for, on April 5, in the same year, he writes to Messrs. John Wood and John Robson, asking them to report upon the plans recommended by Messrs. Wood and Johnson; to state their opinion of "the advantages or disadvantages of the mode of loading, drawing, and emptying the coals, by the iron tubs instead of corves;" and to make such comments as they might think fit "on any other matter or thing respecting the present state and condition of the pits."

[To be continued in next week's Mining Journal.]

AUDITS AND AUDITORS.—The several frauds which have been perpetrated by the employees of Joint Stock Companies has naturally created a desire amongst shareholders that a remedy should be found whereby similar occurrences may in future be prevented; but it is questionable whether progress towards such discovery has been made. The Fraudulent Trustees Act simply facilitated the prosecution of parties in responsible positions for frauds which have always been punishable, yet there are many who use their most strenuous exertions to induce capitalists and others to believe that the duties of directors have been much increased by that Act, and that its provisions are so stringent that whoever undertakes the office of director or trustee runs a great risk of incurring a large proportion of his time in jail. Professional auditors and accountants contend that the chief cause of the evil is, that the accounts are not properly kept and audited, and suggest, as a remedy, the employment of themselves, in order that the financial affairs of the several companies may undergo a strict examination periodically. Within the last two years the number of auditors who have turned philanthropists has considerably increased, and, curiously enough, they all adopt a similar mode of proving that they are really interested in the shareholders' welfare—they publish a book discussing the duties of auditors, and pointing out the awful responsibilities of directors. He who has read one-sixth of these books, however, has a pretty accurate knowledge of the contents of the several treatises, and of the business of extending the business of the writer; one is as nearly like another as a medical book given away as "an act of gratitude," is like its sister treatise offered to "nervous sufferers." The most recent publication upon the subject of audits and auditors is a little work by Mr. J. A. Franklin, in which he clearly shows that the present system of auditing is not all that can be desired, and infers that professional auditors should be employed. Now, the question is whether a professional audit will afford any satisfaction to the shareholders? By the few who have a knowledge of accounts as kept by professional accountants, such an audit would be regarded as useless, since it is well known that the financial position of a company may be made to appear highly flourishing, whilst the reverse is really the case, and yet no professional auditor could say that the books were incorrectly kept. As an example, we may refer to the books of the several mining companies managed at Salvador House; an experienced bookkeeper was employed, and when the crisis came the books were in the most perfect order; not an error to be found, not a false entry made, and had a professional auditor been called upon for a report he could not have made an unfavourable one. We contend that the duties of an auditor are simply to state whether the accounts are correct or incorrect, for if his duties were extended to an examination into the several transactions of the company, the officer would assume the position of a member of a committee of investigation rather than that of an auditor. If he see any charge which appears exorbitant, or any other cause of complaint, he would, if a shareholder, have an undoubted right to require an explanation, but if he were simply engaged professionally he would have no such right. A very false notion seems extending, that auditors should examine into the conduct of the board of directors, shareholders forgetting that the control of the company's affairs would be almost transferred from the directors to the auditors—the former would receive the remuneration, whilst the latter would have by far the larger proportion of the work. If care be taken in the selection of managers, and if shareholders give but a reasonable amount of attention to the affairs of the companies with which they are connected, shareholder-auditors will be enabled to perform all the necessary duties; whilst if those who have charge of the management of the company are dishonest and incompetent, the only remedy is to bring the law to bear upon all who are discovered, and make them an example to their successors.

* *Auditorship: its Obligations and its Responsibilities briefly Discussed.* By J. A. FRANKLIN, Professional Auditor and Accountant. London: Letts, Royal Exchange.

PRACTICAL ROPEMAKING.—HEMP F. WIRE.—It appears that the hemp ropemakers consider that an unfair preference has been given to wire; and that many of the reports, made with a view to show the superiority of the latter, have been unfair in the extreme. Of course, in comparing the two descriptions of rope, the best of each kind should be taken. An excellent treatise on ropemaking* has just been published by Mr. Robert Chapman, of H. M. Dockyard, Deptford, and will, no doubt, remove many false impressions which have hitherto existed. He gives full instructions as to the choice of seed, time of sowing, harvesting, &c., and for spinning, tarring, when requisite, and, indeed, for each operation until the complete rope is made. After explaining the rules necessary to be practised by the workmen, he relates the strength of cordage, and states that the strength of ropes of the same lay is in proportion to the number of yarns, or threads; but three-strand will support more by one-sixth than when laid into a cable. Thus, an 8½ three-strand cable: 8½ = 7225 × 20 = 144500 = 36 × 48 × 9 = 360 threads; a 7½ three-strand cable: 7½ = 525 × 20 = 10500 = 36 × 117 × 3 = 333 threads; showing nine threads less in the 8½ than in the 7½, and the 8½ strand hawser 1 in. less in size; and as twist diminishes strength, the hawser will be stronger. Four-strand cordage is of considerably less strength than three-strand, on account of the additional hard or twist it receives in the making, four-strand shroud, however, being stronger than four-strand cable. One-thirteenth of the number of the yarns that compose a four-strand rope is a base called a heart, and forms a centre to the rope; the strands being wound spirally round the heart, it becomes a radius, and when the rope is put upon a breaking strain, the heart will be the first to break; and where the fracture takes place the strands lose their support, and the rope must break. It often happens that ropes break without any apparent cause, even where there has been no expense spared to procure the best materials, through want of that scientific knowledge necessary to draw a line of demarcation between the maximum and minimum of strength and durability requisite in the manufacture of cordage. The entire work is of the most practical character, and is worthy the attention of every maker or user of rope.

* *Treatise on Ropemaking.* By Robert Chapman. London: Spon, Bucklersbury.

ALUMINIUM.—We glean a few interesting particulars respecting this curious metal, from a work entitled *L'Aluminium et les Métaux Alcalins*, just published by MM. Tisser, gentlemen whom we have several times had occasion to notice in our accounts of the labours of the Academy of Sciences, and who, in the work alluded to, have collected the history of that metal with many important observations of their own. It had generally been stated that aluminium could resist the highest temperature without absorbing oxygen, but we now learn that if the temperature be raised from a white to a welding heat, aluminium will burn with great intensity until a stratum of alumina be formed on its surface sufficiently thick to exclude the atmosphere. As regards alloys, that made with iron is not malleable, but will crystallise. An alloy of 100 parts of aluminium and three of nickel is more fusible and harder than the pure metal. Bismuth forms with aluminium, in the proportion of one to three, an alloy which is very fusible, but also very subject to oxidation when in a state of fusion. If two equivalents of aluminium and one of oxide of lead be exposed to a white heat, a violent detonation ensues, the crucible breaks into pieces, and even the doors of the furnace are driven to a distance. Similar effects occur with oxide of copper, or the sulphates of potash or soda. Aluminium is now much used for jewellery, especially bracelets, pins, and combs; in cabinet making, it is excellent for inlaid work; its lightness renders it extremely convenient for pencil holders, thimbles, seals, small statues, medallions, vases, and the like; for spectacles, as it does not blacken the skin like silver. But one of its most useful applications consists in using it for reflectors of gas lamps, since it resists the effects of sulphurous emanations, which silver and brass do not.—*Galignani's Messenger.*

Mining Correspondence.

BRITISH MINES.

ABBEY CONSOLS.—J. Trewin, Aug. 23: The lode in the eastern shaft is worth 8 cwt. of lead per fathom, and is of a very promising character. The lode in the back of the 10 is much the same as for some time past, yielding $\frac{1}{2}$ ton of lead per fathom. The lode in the bottom of the shaft, west of the said shaft, is much the same as last reported, worth 4 cwt. of lead per fathom, and has the same favourable character. The lode in the mine in the bottom of the shaft, west of the engine-shaft, is yielding 5 cwt. of lead per fathom. The lode in the back of the shaft, west of the engine-shaft, is improved, now worth 8 cwt. of lead per fathom. The masons have finished the walling of the wheel-pit, and we expect to have the axle of the wheel in its place by to-morrow evening.

ALFRED CONSOLS.—T. Trelease, S. Uren, Aug. 23: The lode in Field's engine-shaft, sinking below the 160, is much the same character as last reported. The lode in the 150, west of the lode, is 8 in. wide, producing stones of ore. The lode in the 140, east of the lode, is at present small and poor; the main lode in this level, east of the lode, is $\frac{1}{2}$ ft. wide, containing stones of ore, with a more promising appearance. The lode in Davey's engine-shaft, sinking below the 120, is still large, yielding good stones of ore. The lode in the 120, driving east of the above shaft, is worth 10 cwt. per fathom. The lode in the 110, east of said shaft, is worth 25 cwt. per fathom. The south branch in the mine sinking below the 100 is worth 25 cwt. per fathom. The branch in the 100, driving east of said shaft, is at present unproductive. In the cross-cut at the 70 we have intersected the new north lode to the east of the lode; the lode is $\frac{1}{2}$ ft. wide, worth 5 cwt. per fathom. Nothing else new worthy of notice.

BALLYMONEEN.—W. Barkin, Aug. 21: I expect this day week to have the winze at the depth where we are intending to commence to drive. There is no particular change for sulphur; sunk since last report 2 ft., total, 9 fms. 4 ft. In the adit cross-cut north the ground is very favourable for opening, but the lode is still in a disordered state; driven since last report 1 fm. 3 ft. We have nothing new in driving the adit level east, which has been driven since last report 5 ft. Our engine works well.

BALLYVIRGIN.—D. Macdonald, R. Fellow, Aug. 19: We have put 1 ton of lead and $\frac{1}{2}$ ton of copper to pile since last report, and prepared for the crusher 2 tons of lead. We have shipped 37 tons of lead, and 68 tons of muddle, on board the *Chester*, for Baginbun and Falmouth.

BEDFORD UNITED.—J. Phillips, Aug. 24: The lode in the 130 east is improving, being now 3 ft. wide, and worth 3 tons of ore per fm. The lode in the bottom of the 110 east is yielding as follows: Paul's 5 tons, Higgins's 4, and Jackson's 4 tons of ore per fm. We are sinking by the side of the lode in the new shaft. Millman's lode, in the 115 west, are worth 5 tons of ore per fm. Warn's lode, in the 103 fm. level west, are worth from 4 to 5 tons of ore per fm.

BODCOLL.—F. Evans, Aug. 21: We are making good progress in sinking Evans's shaft, which is now 7 fms. 5 ft. below the 10; in less than a month it will have been sunk to the 20. If permitted, I would continue it 2 fms. deeper before we commence driving the levels, as I prefer a 12 to a 10 fm. level, considering it an advantage in opening ground to have the extra height.

BOILING WELL.—J. Delbridge, Aug. 21: In the engine-shaft sinking below the 60 the lode is from 20 in. to 2 ft. wide, yielding good stones of copper ore, lead, and blende. In the 60 west the lode is 2 ft. wide, stones of lead and blende, not to value; in the 60, east of King's, the lode is 3 ft. wide, yielding good stones of copper ore; the lode in this level bids fair for a further improvement. In the 50, east of King's, the lode is 3 feet wide, yielding a little blende and lead, not to value; the 50 stone is yielding 1 ton of blende per fm. In the 40, east of Austin's main lode, the lode is 1 1/2 ft. wide, yielding a good copper ore. In the 30, east of Stryet's south lode, the lode is 1 1/2 ft. wide, yielding a little blende, not much to value, although from its appearance we may expect tribute ground; in the 20, east of Stryet's shaft, the lode is 1 1/2 ft. wide, a good lode of lead ore; in the 20 cross-cut, south of Austin's, the ground is favourable, we expect $\frac{1}{2}$ ton of lead ore; in the 20 rise, west of Austin's, the lode is 1 1/2 ft. wide, tribute ground. In Austin's shaft, sinking for bearings and cistern, the ground is favourable. We expect in one week to sink for the bearings and cistern, when this is completed we shall fix the pump-lift to that level, and sink towards the 50 with all dispatch. Our tribute for the coming month without alteration to notice. We have a parcel of blende, computed 65 to 70 tons. I am glad to say we sink 5 ft. in the engine-shaft this week. The men are working well, and getting good wages.

BRONFLOYD.—M. Barbary, Aug. 25: There is no material alteration here during the past week. The various stages and levels are turning out on an average $\frac{1}{2}$ ton of ore per fm. We expect to intersect the south or caunter lode by the cross-cut during this week. The dressing and surface operations are progressing favourably.

BRYNAILL.—J. Rought, Aug. 26: The operations for the past three months having been weekly reported upon, and fully described as to the character and quality of the lode at the various points, leaves me nothing particular to comment upon; therefore I briefly say that the whole of the ground driven on the course of the lode in the 10, east of cross-cut, is of a very promising character, and produces ore as named in my weekly advices. Several cross-cuts have also been driven south in the lode, all of which produced ore to a certain extent; indeed, indications warranted the development of the lode to a greater depth; consequently, a winze has been sunk 6 fms. 4 ft. under No. 4 cross-cut. For this depth the lode has been productive for lead ore; in fact, all the ground sunk through will pay for stopping, but I am sorry to say for the present we are precluded from sinking deeper in consequence of an influx of water. The driving of the 10 east, in the middle of the lode, has been resumed, which consists of gossan, a small quantity of barytes, occasional stones of solid ore, and spots of the latter throughout the level. I expect in driving a few fathoms further east it will form a junction with the new or north lode, where a good deposit of lead may naturally be expected. In order to develop the eastern ground, and prove the value of the lode under the ore driven through in the 10, a cross-cut is being driven from the perpendicular shaft, situated south of the lode, to intersect it at 25 fms. As soon as this is accomplished, communications will be effected between the 10 and 25, by sinking the winzes on the course of the lode, when the ore continues in depth, as I fully expect it will, a great quantity of ground will be laid open for stopping, the returns from which I anticipate will be remunerative to the shareholders. We have on the bank a large heap of stuff containing ore, but I cannot say what quantity it will produce; at all events, it is several tons. The new horse-wheel, which is a thorough good one, and erected on the best principle, will be ready for work next Monday morning, which will in a short time be of great service to us. Everything is being done to lay the ground open with the least possible delay.

BUTLER AND BASSETT UNITED.—G. Reynolds, Aug. 24: The lode in the shaft is from 3 to 4 ft. wide, and has a masterly appearance, producing much muddle, with spots of ore throughout; the granite seems to be altering in depth, and has a mineralised appearance. We are now driving nearly 11 fms. below the 50, and propose sinking about 9 ft. more, for bearings and cisterns, and then propose driving east and west with all speed, to prove the ore lode which is going down in the bottom of the 50, where we have every reason to expect something good. The lode going west at the 50 is 4 ft. wide, composed of a congenial spar, producing a little ore and muddle, with a regular underlie. The engine is working well, and keeping the water at $\frac{1}{2}$ strokes per minute.

CAMBORNE CONSOLS.—Wm. Roberts, Aug. 24: In the winze sinking under the 20 fm. level the lode is nearly 2 ft. wide, occasionally producing stones of ore. In the 10 west the lode is small. A pitch in the back of the 20 is turning out well.

CAMBORNE VEAN.—J. Curtis, N. Clymo, J. Vivian, August 26: The lode in the 170 continues to open most favourably, and is still worth from 60 to 70 cwt. per fathom. The lode in the 140 has greatly improved, and is worth at least 50 cwt. per fm. The bottom of the mine is looking as rich as ever, and all is going on well.

CARDIGAN CONSOLS.—J. Sanders, Aug. 24: The lode in the 10 west is looking very promising at present, being spotted with blende and lead ore; the air in this end is very close at present, in consequence of which I have put two men to clear up a winze in the bottom of the adit, which is sunk to the depth of about 8 fms.; this winze will communicate with the 10 about 3 fathoms from the present end, where I expect to get it communicated in the course of a few days. The winze sinking below the 10 west is much the same as for some time past, yielding about 3 cwt. per fm. The 10 east is much the same as last reported, yielding stones of ore occasionally, but not to value. The winze sinking below this level, west of footway shaft, is still unproductive. In consequence of the long continuance of dry weather the water is up to within 3 fathoms of the 20, and our dressing is almost at a stand-still. There is no change to notice in the tribute pitches since last report, there being still three pitches, working by ten men.

CARDIGAN SOUTH BOG.—J. Kemp, Aug. 25: At Phillips's shaft, sinking under the 10, the lode is much the same as last reported. In the 10, west of Phillips's shaft, the lode is about 7 ft. wide, producing good stones of lead ore. The long dry weather which we have had has caused our pumping water to fall short, and our operations in the cross-cut, north of Brynhope shaft, has been for the last week suspended in consequence. All other operations are progressing satisfactorily.

CARADON CONSOLS.—W. Rich, Aug. 24: The sinking of the new engine-shaft is being proceeded with, by nine men, as fast as possible. The cross-course at the shaft is nearly perpendicular, very near, and well defined. The general appearance of the ground in this eastern part of the mine seems very congenial for copper. We are preparing to lay down a line of rods from the engine to the new shaft; we have rods enough on the mine for the purpose, and pitwork sufficient to put the shaft to a good depth.

CARMARTHEN UNITED.—B. Sanders, Aug. 24: At Harrison's engine-shaft, sinking below the 12 fm. level, the lode is about 6 ft. wide, and contains a quantity of carbonate of lead, with solid branches of galena in the joints and cleavage throughout. In the rise in the back of the 12 the lode of the lode is saving work for lead. In the cross-cut driving west the ground is at present very hard, consequently our progress is slow to what we anticipated, and the water coming from every pore makes me think we cannot be far from the lode.

CARVANNALL.—W. Roberts, Aug. 24: In the 130 west the lode is 2 ft. wide, very promising, with stones of good ore. The winze sinking under the 118 is opening tribute ground. In the 118 west the lode is 2 ft. wide, chiefly composed of crystallised iron. In the 86 west the lode is 1 ft. wide—unproductive.

CARVATH UNITED.—H. Hancock, Aug. 23: The 50 end, west of the engine-shaft, is not so good as it has been, but still large and kindly. In the lode in the back of this level the lode is just the same, producing good work. The lode, west of engine-shaft, has been producing some good work for tin, and still kindly for driving, and well worth prosecution at present, and if so I believe it will open tin ground that will pay for working. All the operations throughout the mine are working well at present.

COLLACOMBE.—S. Mitchell, Aug. 24: During the last week the 84 fm. level, west of Morris's shaft, has been driven 6 ft., and the lode is greatly improved, being composed of capel, quartz, and rich copper ore, producing good saving work. The 62 west is also improved, and judging from its present promising appearance, I believe it will speedily become productive. The rise in the back of the 40 west has been holed, by means of which much good tribute ground has been laid open. The prospects of this mine throughout are looking better.

CWM ERFIN.—Aug. 23: The lode in the 80, going east of the drawing shaft, is $\frac{1}{2}$ ft. wide, composed of a light clay-slate, branches of quartz, and spots of lead ore. The lode in the 57, going east from drawing shaft, is 3 ft. wide, composed of clay-slate, carbonate of lime, blende, and lead ore, yielding of the latter 8 cwt. per fm. A lode has been started over the back of this level, about 30 fms. east of the drawing shaft. The lode in the same is 3 ft. wide, yielding from 10 to 12 cwt. of ore per fm. The lode in the lode over the back of the same level, about 25 fms. east of the drawing shaft, is rather improved, now yielding about 12 cwt. of ore per fm. The lode in the 45, going east from the cross-cut, is 18 in. wide, composed of clay-slate, quartz, copper, and lead ore, yielding of the latter about 8 cwt. per fm. A new lode has been set over the back of this level, about 30 fms. east of cross-cut; the lode on an average is 5 ft. wide, yielding 10 cwt. of ore per fm. The lode in the 32, going east from the cross-cut, has rather improved in the last week, and still looks promising, being composed of quartz, blende, copper, and lead ore, yielding of the latter about 12 cwt. per fm. The lode in the lode over the back of the lode, east of the lode, is on an average 4 ft. wide, and yielding 15 cwt. to 1 ton of ore per fm. The lode over the back of the same level, and

known in my last as 7 fms. west of the cross-cut, have become quite exhausted. The lode in the 50, going east from the cross-cut, continues to be of the most promising appearance, being 4 ft. wide, composed of clay-slate, carbonate of lime, copper, and lead ore, yielding of the latter 1 ton per fm. The lode in the lode in the back of this level, over the cross-cut, is 4 ft. wide, yielding 15 cwt. of ore per fm. The ground in the 10 cross-cut south continues to be much of the same character as when last reported. I calculate on reaching the lode in eight weeks from this date.

DALE.—R. Nines, Aug. 26: We sampled on Tuesday last 7 tons 8 cwt. of lead. We shall be down 6 fathoms below the 37 by the 4th, which is our setting day, and shall then commence to drive into the Pipe. The other parts of the mine are much as last reported.

EAGLE ROCK (Talbot).—S. Tyack, A. Francis, Aug. 27: This mine is situated about two miles to the north-west of the West Potom Mines, where about two months since a very valuable discovery of lead ore was intersected by driving a cross-cut a great distance from the side of the mountain, and is not more than about three miles from the Welsh Road Mine, once so rich for producing lead ore. Eagle Rock was wrought by means of a deep adit level, driven in a westerly direction from the River Lletwy, which adit is now in course of being cleared out, in doing which we find a large portion of the vein standing to the north, containing a mixture of carbonate and blue lead, embedded in gossan and soft spar. The Hill Pass rapidly on the course of the lode, and it is anticipated when the end of the present level shall have been reached, judging from what can be seen at surface, that we shall have a back of from 25 to 30 fathoms. In driving the adit we expect to intersect some other veins known to exist in the grant, and where there is every probability the lodes will be found to increase in their productiveness. The old winze used nothing but the bucking hammers for returning their lead, and it is highly probable in the 20 days no machinery was used in this county for the purpose. There is every facility for the removal of water-wheels, and an abundant supply of water at any season of the year, the River Lletwy passing within 10 yards of the adit's mouth, and with good roads and moderate royalty. A few weeks will throw a great light on this property, which is generally well thought of by every miner who has yet seen it.

EAST CARN BREA.—T. Glanville, Aug. 25: In the winze sinking below the adit level the lode is 18 in. wide, composed of gossan and copper ore. In the 14, east of the engine-shaft, the lode is yielding $\frac{1}{2}$ ton of ore per fm. We have not yet taken down the lode in the shaft, but intend doing so the latter part of this week.

EAST GUNNIS LAKE AND SOUTH BEDFORD CONSOLS.—J. Phillips, Aug. 24: The lode in the 75 west continues to yield 2 tons of ore per fm. The lode in the 36 east, on north lode, is 2 feet wide, producing good saving work. South Lode: The lode in the 36 east is 3 ft. wide, composed of gossan, spar, and grey ore. The lode in the 36 east is improved, now worth 1 ton of ore per fm. The lode in the 20 east is 2 feet wide, worth 1 ton of ore per fm.

EAST PROVIDENCE.—Wm. Hollow, T. Uren, Aug. 23: On Saturday, the 7th inst., our new 40-in. engine was set to work. The machine, with pitwork and flat-rods, started admirably well, and is now working beautifully. We are now persevering with all possible speed in cutting down Harvey's shaft below surface; we have six men engaged in this work, and we hope to reach the bottom of the old workings, which is about 12 fms. deep, in two or three weeks, and then we shall cut a pit, fix a house-lift, and commence sinking on the lode. We are sinking Poole's shaft below adit by six men, at 10 ft. per fm.; here we have not taken down much of the lode since the engine was put to work; the ground about this shaft is highly mineralised, and we are strongly inclined to believe this lode will be a very productive one at a depth, as there are north and south branches that will intersect it. The eastern adit is driving west from Poole's shaft by two men, at 35 cwt. per fm. No change here in the lode since last report.

EAST ROSEWARNE.—J. James, Aug. 21: In the 43 cross-cut, south of engine-shaft, the lode is improved for driving, and in a kindly killas. In the 33, west of Mathew's shaft, the lode is still in several parts, and unproductive. In the 22, west of Hanley's, on Brook south lode, the lode is rather disordered, containing spots of blende and copper ore. In the 22, east of Mathew's cross-cut, on the north lode, the lode is about 9 in. wide, composed of muddle and copper ore, very kindly, and opening tribute ground. In the winze sinking below the 12, same lode, the lode is 6 in. wide, containing stones of ore. We are sinking Hallett's shaft with all possible speed. We are raising some good grey and black copper ore from Knight's pit, in the bottom of the 12, on the north lode at King's shaft.

EAST WHEAL RUSSELL.—J. Goldworthy, Aug. 26: The lode in the 84 continues favourable for driving. No lode has been taken down since last report. In Homer-sham's shaft the ground is a little improved for sinking. In the 66 the lode is being deuced, and will be taken down in the course of a few days. The 45 is now cleared east of the Tunnel 20 fms. The pitches, on an average, are about the same as for some time past. About 35 tons of ore will be sampled to-morrow, of fair quality.

EAST WHEAL TOLGUS.—Aug. 21: Redruth Consols Lode: In the 46, east from engine-shaft, the lode is 10 in. wide, unproductive. In the 33, east from engine-shaft, the lode is 10 in. wide, unproductive. The water is issuing from the south, and we have put the men to cut in south to see the south wall. The eastern stopes, in the bottom of the 22, is not looking so well as when last reported, now yielding 1 ton of ore per fm. The western stopes, in the bottom of the 22, is yielding 2 tons of ore per fm. The lode in the 22 east is 3 ft. wide, consisting of spar, jack, and muddle, with occasional stones of ore, and letting out a quantity of water. In the 12 east the lode is 2 ft. wide, consisting of spar, muddle, and can, or fluor-spar, and producing occasional stones of ore. The lode in the back of the 12, west of John's shaft, is yielding $\frac{1}{2}$ ton of ore per fm., and the lode in the back of the 12, east of John's shaft, is yielding 1 ton of ore per fm. The lode in the adit, driving east of the engine-shaft, on the north lode, is split into two branches, and poor. The ground in the 12 cross-cut, driving south from the engine-shaft, is much the same as when last reported, rather hard.

FOWEY CONSOLS.—P. Rich, C. Merritt, S. Sampson, Aug. 23: The lode in the 260, east of Bottrill's shaft, on Trathan's lode, is 2 ft. 6 in. wide, with spots of ore. The lode in the 250, east of Bottrill's shaft, on Trathan's lode, is about 7 ft. wide, and yields about 3 tons of ore per fm. The lodes in the 240, 230, and 180 are still poor. The lode in the 260 east, on Bottrill's lode, is 4 ft. wide, and will turn out 5 tons of ore per fm., worth 5 cwt. per ton. The lode in the rise in the back of the 240, on Bottrill's lode, will produce $\frac{1}{2}$ ton of ore per fm. In the 240, going east, we have cut the cross-course, but have not yet got through it. The lode in the 230 east, on the lode, is still poor. The lode in the 180, east of Bottrill's shaft, on Hewett's lode, will yield $\frac{1}{2}$ ton of ore per fm. The lode in the 170 west, on Hewett's lode, will yield about 2 tons of ore per fm., worth 8 cwt. per ton. The lode in the 160 west will yield 1 ton of ore per fm., of fair quality. The lode in the winze sinking under the 60, east of Austin's shaft, on John's lode, will yield 2 tons of ore per fm., worth 7 cwt. per ton. The ground in the cross-cut north of the cross-course is rather harder than usual. The lode in the adit level west, north of Carrogat shaft, is divided into branches. The ground in the adit driving south in Foster's Wood is still favourable for driving. The pitches and bargains throughout the mine are looking much as usual.

GAWTON.—J. Gill, Aug. 25: The lode in the 50 east is 2 ft. wide, containing a great deal of muddle, and occasional stones of copper ore. The rise in the back of the 50 west is 7 fms.; the lode being much of the same character as last reported, but letting out more water, which shows the lode to be more porous above us. There is no alteration in the stopes or pitches since last week. We expect to sample on Friday next from 80 to 100 tons of copper ore.

GREAT HEWAS.—J. Webb, Aug. 25: We have nothing new in the 96. We intend driving 3 fathoms further, then putting up a rise on the run of the lode to the 86. We have an improvement in the 76 west. There has been a long barren piece of ground where the lode has been disordered with a splice. I hope this will lead to the apparent new run of tin in the 66 west, where the lode contains good work for tin. We have taken down some fathoms of the lode in the 56, east of Charles's shaft, which is 1 ft. wide, saving work, but not rich. The lode in the 36 east is rather improved; very little alteration in the stopes and tribute pitches since last report. We have sold last month tin, about 13 tons, at the same price as the previous two sales.

GREAT SOUTH TOLGUS.—John Daw, Aug. 25: No lode has been taken down at Lyle's shaft in the past week. The lode in the 80, west of Lyle's shaft, is $\frac{1}{2}$ ft. wide, producing 4 tons per fm. The lode in the winze sinking below the 70 is 3 ft. wide, producing 5 tons per fm. We shall sample to-day 218 tons.

GREAT WHEAL ALFRED.—M. W. Mitchell, W. Bagelhol, W. Arthur, Aug. 21: We have resumed the sinking of Copper House shaft below the 190, by twelve men, who have 145 ft. of shaft sunk, and the lode is 1 1/2 ft. wide, producing a little ore. The lode in this level west is $\frac{1}{2}$ ft. wide, worth 12 cwt. per fm. The bottom of this level is of considerable more value than the back, consequently we may expect the next level (the 200) to yield larger quantities than any level yet. The lode in the 180 is still in a disordered state; it is from 4 to 5 ft. wide, composed principally of fluoan and soft spar. No change in the 170 since our last. The lode in the 160 west is 18 in. wide, producing a little copper ore. In consequence of a great deal of hindrance in changing and fixing the necessary pitwork in Copper House shaft during the past month, our sampling on Tuesday next will be very much less than the last, but being now in a good position for sinking we hope to raise our usual quantity next month.

GREAT WHEAL BUSY.—J. Nancarrow, Aug. 21: The summen having been engaged in making a dam in the 100, and taking down the ends of the shaft, there has not been much sink in the 100 west of the lode, the lode is 1 1/2 ft. wide, worth 30 cwt. per fm. for copper. The ground in the 100 east is better for driving; the lode is worth 7 cwt. per fm. Offord's shaft has improved; the lode is worth 7 cwt. per fm. for copper. The 90 east is a promising lode, producing stones of ore. In the 80 west we have some good ore in the back of the end, which presents a very promising appearance. In the 50 west 22 ft. have been driven across the lode; the south part we find to be principally capel, but mixed with ore throughout. A little increase of water in Wheal Seymour deep adit cross-cut seems to indicate our being near some lode or branch. We expect to finish the condensing water level next week, and have already got down a part of the new lift for the pumping of the water. Nothing can work better than the skip does on the new road, by means of which we have nearly cleared the bottom part of the mine. At Redd's everything is in vigorous operation; we have cleared the shaft to adit, and the adit level 60 fms. east; we expect to get two pairs of men to commence cutting down the shaft next week; one of these are now engaged in preparing another shaft for drawing the stuff; the foundations are being cleared out by ten men. The engine-house at Hailenbeagle is pulled down, and the stones are being carried as fast as possible; we shall set the masons to work on Monday. The tin pitches are improving, and our prospects are encouraging. I am sorry to inform you that we lost one of our summen, on Tuesday, a fine young man, who was killed instantly by a stone falling through the shaft and striking him on the head.

GWYDYR PARK.—H. Rawson, Aug. 26: In the Cross Mawr level we have broken down the lode this morning; it is looking much the same as my last; the ground is tight and wet.

HARWOOD.—J. Race, Aug. 21: The lode in Ruffrig vein is not so good as last reported, worth about 8 cwt. per fm. No change in the lode south in the cross vein. I have let the new cross-cut at 50 cwt. per fm. for one month. We have about 2 tons of ore on the dressing-boards.

HAWKMOOR.—J. Richards, Aug. 23: The water is in fork to the bottom of the mine, and I have taken in full pairs of men to drive east and west at the 60, and four men to drive west of the great cross-course at the 50, and six men at the 40 east; in this end the lode is full 3 ft. wide, but the leader part of the lode is not quite so rich for copper as when last taken down. I have three pitches on tribute, which will produce some good work for copper. Our 28 tons sold at 51. 6d. per ton. At West Hawkmoor, there is no change to notice.

HINGTON DOWN CONSOLS.—W. Richards, Aug. 25: There is no alteration to notice in the underground department since my report of last week. We purpose sampling on Friday next from 200 to 210 tons of average quality ore.

HOLMBUSH.—N. Secombe, August 24: In the 145, west of cross-cut, no lode has yet been taken down, the lode continues to look well. The lode in the end east of cross-cut, in the same level, is yielding 1 ton of ore per fm.; this end is suspended until the lode is intersected by the cross-cut driving from the former level, which will be in a few feet further driving. The lode in the back of this level are yielding from 1 to 2 tons of ore per fm. In the 160, east of diagonal shaft, the lode east of the cross-cut driven south is producing 1 ton of ore per fm.; we have set to six men to drive a level west

of this cross-cut, back by the side of the former level. In the 160, west of the diagonal, the men continue to drive west, as from the appearance of the ground, there is yet another part of this large and split up cross-course yet to be crossed, before we shall reach the main part of the lode. The lode in the back of the lode, east of the lode, are producing 1 ton of ore per fm. In the 132 south, on the lode, the lode is 1 1/2 ft. wide, and in the past week has yielded a considerable quantity of friable fluor-spar, intermediate with lead and jack, but not so productive for either as for some weeks past—changes seem to be the character of this lode. The rise in the back of this level has hitherto been more productive than the end; we are expecting to communicate with the 120 in a few days. Other places are without any change to notice. The following is the amount of driving, &c., in the past week:—The 145, west of cross-cut, 4 feet; the 140, east of ditto, 4 feet; the 145 cross-cut south, 3 feet; the 160, east of diagonal, 4 feet; the 160, west of ditto, 8 feet; the 132 south, on lead lode, 3 fathoms; the 132, rising in the 100, west of ditto, 2 feet; the 132 cross-cut south 2 feet; the 145, west of diagonal, 1 1/2 ton of ore per fm. The lode in the bottom of the 145, west of the great cross-course, are yielding $\frac{1}{2}$ ton of ore per fm.

KELLY BRAY.—S. James, Aug. 21: The lode in the 135 east is $\frac{1}{2}$ ft. wide, poor at present. The lode in the lode in the back of the 85 west is $\frac{1}{2}$ ft. wide, worth 12 cwt. per fm. The 70 end east is suspended for the present, owing to there not being sufficient air for two pairs of men to work at one time, before the communication is made with the stopes, and winzes which are sinking in the bottom of the 45 west; when this is completed there will be a valuable piece of ground laid open. The lode in the winze in the bottom of the 45 west is 7 ft. wide, and will yield 6 tons of ore per fm., worth 5 cwt. per ton for the length of the winze (12 ft.). The lode in the back of this level are set on tribute. The lode in the 45 east is 2 ft. wide, yielding good stones of ore. There is no change in the tribute department worthy of notice.—Eastern Mine: The shaftmen have finished cutting ground for the plunger in the 80, and will commence sinking below that level for bearings and cistern next week. The ground in the cross-cut in the 40, driving north, is of much the same character as it has been for some time past, strongly mineralised, with branches containing muddle and ore. We are getting on with the dressing of ore for another sampling with all possible dispatch, and hope to get upwards of 110 tons.

LADY BERTHA.—J. Metherell, Aug. 25: Moyie's engine-shaft is down 10 fms. 4 ft. 6 in. below the 30; I do not see any alteration in the appearance of the ground. In the 30 both east and west the lode is still unproductive; I am forcing on the western end with all possible speed. Carter's pitch, in the back of the same level, is worth about 3 tons of ore per fathom. There has been no lode taken down in the 20 east since last report. Robin's winze is sinking in killas to the south of the lode, which has not yet been cut through. Lamin's pitch, in the back of the 20, is worth about 2 tons of ore per fm. No other alteration.

LEWIS.—W. Bishop, W. W. Martyn, Aug. 25: At the skip-shaft, sinking under the 120, the lode is producing a little tin, and is likely to improve. The 120 end is extended 2 fathoms east of the cross-course; lode large, and letting down the water from the 110. The 120 cross-cut is extended 2 fms., and we expect to intersect the south lode in about 4 feet driving. As the water is decreasing in the 110 we have begun to sink a winze, which is worth 30 cwt. per fathom. The 110, on the south lode, is worth 8 cwt. per fm.; the 110, on the north branch, is worth 4 cwt. per fm.; the 110, on the other part, the same part, is worth 8 cwt. per fm. No change to notice in any other part. The tramway to the back side of the stamps is completed. It should be remembered that our returns for the last twelve months have been principally from the back of the 110, and that now we have the 120, and in less than three months we hope to get the 130, when good returns may be expected, as this east run of ore ground is more than 70 fms. in length.

MOLLAND.—T. Bennett, Aug. 25: There has been nothing done in either of the ends of the 32 fm. level since last reported, the men being engaged in cutting a pit, which I expect will be finished by the end of this week. We were, however, hindered from doing anything in the bottom last night, in consequence of having had the mixture to break the piston-rod of the engine, but which, I am glad to say, has been repaired, and the engine will be ready to work again in the course of an hour from this time. The lode in the 20 east, although not so rich as the lode in the 20 west, is still a good lode. The lode in the back of this level are worth 5 cwt. per fm.

NEW TRELEIGH.—J. Prince, Aug. 25: The lode in the 60 west is 2 ft. wide, thereby being 2 ft. wider, and opening as we were doing it; it is a very pretty looking lode. In the eastern and the branches are approaching each other fast; the killas in the middle, therefore, will soon be cut out, when the end will not doubt be found equally as good as it was before the lode split into two parts; considerable quantities of water are issuing from both ends, but more especially the western one. The stopes, I regret to say, are a few feet only above the back of this level; it is in silty ground, a confused stratified compact slate. Judging by the appearance of the lode when first cut at the shaft, and the subsequent takings down in course of sinking, I fully anticipated that we should have had a 5 fms. lode of a good ore lode both east and west of the shaft. The men are, therefore, not so contented as they were, and the lode is not so good as they were expecting. This silty ground, however, appears to be rising fast going west, and the ore is following it. There is also a good lode in the bottom of the level from east to west, and the prospect of sinking the shaft below the 60 on the course of the lode looks well. The lode in the 50, east of Carr's shaft, contains a small quantity of good quality ore, and it appears to be opening up and down the end. In the western end the ground is hard, but good stones of ore are frequently broken from the lode, and it is more wet than it was. The water in the 40 winze is too much for us to sink it, and the air is not sufficient to enable us to rise in the 50 to effect a communication. The men are, therefore, not so contented as they were, and the lode is not so good as they were expecting. The air through the mine is not bad, but there is not enough of it. The surface water at present is not sufficient to work the air-machine throughout the day and night, so that winzes, or sub-shafts, must be sunk, not only to prove the lode from level to level, but to effect a permanent ventilation. In the 40 cross-cut we have cut through the hard capels, and reached killas ground; these capels belong to the Shaghar lode. The water at Nicholson's is sinking fast; it is now down 3 fms. below the 10, and we have placed men to stop that level, where the copper ore in the lode will leave a good profit to the shareholders.

NETHER HEATH.—W. Vipond, Aug. 20: The end of the drift going west continues to improve for driving. It is now easier the whole height of the drift, except a piece which they have not yet taken up. The sink level, or any part of the vein is level 8 in. wide. The flat from the vein has been improved during the week; it is now worth 16 cwt. of ore per fm. The lode in the 20, east of the lode, is still poor, but we expect an improvement a little further on.—F.S. Since I left the men in the drift this morning they have met with some very nice samples of ore.

NORTH WHEAL ROBERT.—Wm. Godden, Aug. 24: We have an improvement in the south part of the lode, which we are now taking down of the trial shaft; so far as seen it looks splendid.

Aug. 25: The south part of the lode, west of trial shaft, is about 2 ft. wide, worth 2 tons of ore per fm., so far as seen; the men will complete taking down the part that is deuced this afternoon.

J. Richards, Aug. 26: In the 52, west of Murchison's engine-shaft, the lode is being cut into, and so far as seen it is very promising, containing capel, muddle, quartz, and ore, worth 15 cwt. per fm. In the 42, west of the trial shaft, west of the cross-cut, on the south part of the lode, the lode is improved, being at present worth 2 tons

PRICES OF MATERIALS,				
As charged at the ST. AUBYN AND GRYLLE MINES during the following months:—				
		February.	March.	April.
		13s. 6d.	13s. 6d.	13s. 6d.
Coals	per ton	19	19	18 4
Ditto, Cardiff	"	19	19	18 4
Timber, balk	per foot	10	10	0 10
Ditto, pine	"	1 4½	—	—
Ditto, birch	"	2	0	—
Iron, common	per cwt.	8 6	9 0	9 0
Ditto, crown	"	11 6	11 6	11 6
Ditto, hoop	"	13 6	—	—
Steel, cast	"	60	0	50 0
Ditto, H 2	"	27 6	—	28 0
Chain	"	—	—	—
Lead, white	"	—	—	25 0
Nails, patent 3½ in.	"	—	20 0	—
Hemp	per lb.	0	4½	—
Yarn	"	0 5	0 5	0 5
Tallow	per cwt.	57 6	57 6	—
Candles	per doz.	6 3	6 6	6 6
Hits, pick	"	1 6	1 6	—
Powder	per 100 lb.	58 0	—	51 0
Leather	per lb.	2 3	—	—
Safety-fuse	per coil	—	—	0 6

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

At the UNITED MINES, on Thursday, 681 tons of copper ore were sold, and it is anticipated that for the future a very large increase will take place, owing to the splendid discoveries recently made. The mine is now better ventilated, and the ground has been reduced from 304. per fathom to 111. per fathom for driving on the Hot lode, when immense quantities of ore will be raised. Some few years ago the shares of this mine were at a very low price, and when discoveries were being made they went up to between 700l. and 800l. pounds per share. Now, looking at the district of Gwent, which has been one of the first in the world, the large courses of ore at the present time discovered, varying from 10 to 20 tons per fathom, in the levels and winzes, and also the further improvement which are daily expected, we see no reason why this property may not double and treble its present value.

GREAT CRINIS.—The new company will commence active operations on Sept. 1. From the influence of those connected there can be no doubt of the property being actively and vigorously prosecuted. It is the opinion of all practical men that these mines will soon take a first-class position.

At the DEVON and COURTESY MINE there was a very large meeting on Tuesday, when the agent's report was heard with a deal of satisfaction. The lode is daily expected to be seen at the 100. The lode in the 80 is worth 40l. per fathom, and the sampling will be from 30 to 40 tons of good ore, nearly enough to pay two months' cost. No call will be made in the balance in favour of the company of nearly 200l., and 200l. worth of ore. Should the 100 cut good, Devon and Courtesy may be considered at once to be in the Dividend List, after expending 40,000l., thus carrying out the old adage, that perseverance and energy shall be rewarded.

NEW WHAL VADON MINE.—We learn that two boxes of splendid specimens of tin and copper ore have arrived in town this week from this mine, one of which is lodged at the company's office, Waterloo-place, Pall-Mall.

RIDEN MINE (North Staffordshire).—It must indeed be cheering to this company to have such brilliant prospects opened out to them in so short a time. Eight large rock veins have been already discovered, all of which contain copper or lead, some both, as can now be seen in the veins as well as the large lumps now at surface. The operations are carried on in good earnest, there being at this time about fifty sturdy miners employed in the different works necessary for future development.

TREWEATHA is improving in the 90 fm. level; the lode is looking better, containing more lead, and every appearance of further improvement.

BYRNGLAS MINING COMPANY.—The mines which this company propose to work were abandoned by the former workers from want of sufficient power to keep the water out, and inability to provide the requisite funds; but the prospects of the mine were considered highly encouraging, nevertheless. The primary object of the Brynglas Company was only to further explore the main shaft, in which a promising shaft had been discovered; but, their operations having given them encouragement, they decided to erect extensive machinery, and thoroughly develop the mine. About six lodes were discovered upon the surface (one in cutting the foundation of a smith's shop), and in driving they have intersected the main lodes of the Cwmystwith Mines, which of themselves are sufficient to justify all which may be required. It is confidently anticipated that Brynglas Mine will, ere long, be one of the most important in the principality.

NORTH TREKERRY.—This adventure is to be prosecuted with renewed spirit, for which purpose a call of 1l. per share has been made. Mr. R. C. Webb is appointed purser, and Capt. John Raby manager.

THE LLYWYNGWERN SLATE QUARRIES.—These long-neglected quarries have recently been reopened, and are now about to be put into active operation by a private company of two spirited individuals only. They are now turning out splendid slate slabs of large dimensions, and have a quantity of slates on the bank. A most substantial 30-ft. water-wheel, together with sawing and planing machinery, have just been erected at the works by Messrs. H. Owen and Son, of Carnarvon, from designs and under the directions of Mr. W. R. Williams, mining engineer, Dolgelly. The Corris and River Dovey Tramway, now rapidly progressing, will be an inestimable benefit to this, as well as the several other important slate quarries in the Corris district; and it is fully expected the properties of the Llywngwern quarries will, in a short period, be remunerated for the outlay they have so judiciously and spiritedly made, to that extent which they are so well deserving.

MINING IN CUMBERLAND.—We were much pleased by perusing an article in the *Cardiff Journal*, by "A Tourist," on a valuable discovery of lead by Captain Jeffrey near the village of Mines, situated on the north side of High Tike, which is likely to turn out to be of great importance. This speaks well for the tourist, who in search of pleasure takes advantage of his visit to the lakes and mountains of the North to inspect the mineral wealth of the districts he passes through, which require only a judicious outlay of capital to ensure profitable returns—not only in Cumberland, Westmoreland, and Yorkshire, but in districts further north. We called attention last week to the Haydon Bridge district, in Northumberland, where there are two or three mines paying large dividends, one of which is worked by a spirited lady, who is employing nearly 100 hands, and has been profitably working for above 20 years. Others only require to be opened to ensure success, which we hope soon to see brought into operation. Although the mineral produce of these lodes realise 35,000,000l., it is evident that it may be greatly increased if only half of the money which is spent on worthless foreign mines was properly applied at home.

GREAT SHEBA CONSOLS MINE.—Messrs. Samuel Yorke Martin, of the Holme, near Wareham, Dorset, Major in the Royal Engineers; John Rickdow, of Lickhill, Stourport, merchant; and the Rev. Edward Robert Pemberton, of Eagle Lodge, Bams, clerk, filed a bill in Vice-Chancellor Kindersley's Court, to compel Mr. Henry Vatcher, of Exeter, late purser of Great Sheba, to deliver up to them the books, deeds, and papers—the purser holding them as a lien for 35l. 18s. due to him from the company. On Friday, the 20th inst., the plaintiffs applied by summons to the Chief Clerk of the Court of Chancery to amend the bill, which was refused, on the ground of the plaintiffs not having complied with the standing orders of the Court; the summons was, therefore, dismissed with costs.

WEST SETON.—At the meeting, last week, Capt. C. Thomas was instructed to purchase Trevaun engine, for 950l.; and also the captain and shears, for 50l.

BREAD FROM COAL:

PRACTICAL SCIENCE—WONDERFUL CHEMICAL RESULTS.

The science of political economy is threatened with a total overthrow—its dicta, its theories, its very facts, are in danger of being contradicted, refuted, and disproved. The questions of supply and demand, of imports and exports, the balance of trade, of the comparative importance of commerce and agriculture, and all those matters that are usually thought to have an intimate bearing on national prosperity, may, perchance, be settled in a manner altogether different from that contemplated by political economists, and may be completely set at naught.

The agency by which the foundations of that fabric of modern wisdom have been shaken is the frequently despised practical science which undertakes the investigation of the minute particles of bodies, analyses their composition, and shows how all substances in nature are formed out of a few elements variously combined together. The chemists of the present day have, indeed, already accomplished greater wonders than the alchemists of old vainly attempted to achieve, for nearly everything they touch has been transmuted into gold; and they have by the same process vastly increased the conveniences, the comforts, and the luxuries of life, and added greatly to the resources of the empire. All the wonder-working powers that chemistry has yet displayed, would, however, be thrown into the shade by the fulfilment of the hopes of an indication was given in a recent lecture by Prof. Frankland, at the Royal Institution.

The chemical agencies of which we have now to speak, do not manifest themselves by merely varying the combinations of the elements of the same class of substances to produce other substances possessing different qualities, still belonging to the same class; but they transmute one class of substances into another, which was formerly supposed to be only possible by the agency of vitality. By this means the simple elements of matter may be converted into organic compounds, and the food of man may be produced directly from its original sources without the intermediate agencies of vegetation and animal life. Now in this a most speculative theory, like the day dream of an alchemist, for the constituents of the food of man are well known, and are easily obtainable from the bowels of the earth and the air we breathe, and all that remains for the chemist to do is to combine them in such a manner as to render them capable of assimilation by the digestive organs. The nutritive constituents of wheat are carbon and hydrogen; the proportions in which they unite together in the vegetable product are known, and the elements are abundant in nature; then, why should not the chemist put them together so as to form nutritious food? COAL PRESENTS US WITH ALL THE INGREDIENTS FOR MAKING THE BEST OF BREAD; and when we consider what the chemist has already done with coal, it need not excite surprise that he should knead it into the staff of life. Look at the splendid lights which illuminate the streets; at the beautiful translucent candles called paraffine; admire the brilliant dyes, of all the colours of the rainbow, which are extracted from that hard black mineral, and then cease to think it absurd to expect that from the same substances, which contain the elements of wheat, we should be able to obtain loaves of bread. Prof. Frankland informs us that within the last two or three years nearly 700 organic substances have been produced by various modes of combining the elements which are found in coal, and among the compounds thus produced are the peculiar essences which constitute the flavours of our choicest fruits. It is no longer needful to cultivate the pear, the peach, or the pine apple to obtain their delicious flavours, for they can be produced by chemical agency from the combination of the constituent elements. It is in this manner that, by processes which it may not be desirable to investigate too curiously, the full flavour of the fruit is given to confectionery that may be bought for less than one penny the ounce. By other chemical processes grape sugar, ethers, and the essential parts of oil, have been obtained without the aid of vegetation. Those substances might contribute that portion of nutriment which tends to maintain animal heat, and to supply the fatty materials of the body, but the means of supplying the muscular and fibres have yet to be discovered, for all the attempts hitherto made to form organic compounds with nitrogen have failed. When we bear in mind, however, that only thirty years ago the production of any organic compound without the agency of vitality was considered impossible, and that 700 of such products have since been formed, principally within the last five years, there is reason to expect that further researches and discoveries will ere long disclose the means of making from the inorganic elements all kinds of food adapted to the sustenance of man. And that which seems within the range of probability for the production of food is equally possible for the materials of clothing. It was stated not long since that a method had been discovered of producing silk directly from mulberry leaves, and dispensing with the troublesome, precarious, and consequently costly, operations of feeding and tending the worms, and of winding the cocoons. The invention may be only in its infancy, while undergoing the process of perfection through which all great inventions have had to pass before they became practically useful, and silk may in a few years be grown like cotton. What is possible with silk should be equally so with wool, hair, and hides, and all the animal materials of manufacture might be extracted directly from grass and foliage. Nay, the chemist may advance still further; and as he hopes to obtain, by the action of chemical affinity, organic materials for the food of man without the agency of vitality, it would be but a slight step to derive the materials of clothing independently of vegetation.

Assuming for the moment the realisation of these hopes raised by the chemists—which are based on numerous successful experiments—what then will become of the systems of political economy, of international trade in articles of food and materials of manufacture? Of what use to us will be our Indian empire, or the establishment of forced relations of amity with the Chinese? What will become of our agricultural population? and what will be done with the bleating flocks and the lowing herds when animal food and animal material for clothing are no longer needed? When that millennium arrives the fields will be turned into flower gardens and ornamental parks, fountains of nectar and fragrant

liquid perfumes will gush forth on every side, to renovate and refresh; the butcher and the pet lamb will lie down in peace together; beggars and paupers will be no more; and the nation will rejoice in universal plenty. This may not come to pass in our day, but it is well to make preparation for prospective events, and the provident politician will assuredly thank us for directing his glance to what is thus "looming in the future."

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, AUG. 27, 1858.

COPPER.			BRASS.		
	£ s. d.			Per lb.	
Copper wire	0 1 13-1 2		Sheets	10 1/2-11 1/2	
ditto tubes	0 1 2 1/2-1 2 1/2		Wire	10 1/2-11 1/2	
Sheeting & bolts	0 1 0-1 0		Tubes	12 1/2-13 1/2	
Bottoms	0 1 0 1/2-1 1				
Old (Exchange)	0 0 10 1/2-1 1				
Best selected	10 10 0-11 0				
Tough cake	10 10 0-11 0				
Tin	10 10 0-11 0				
South American	10 10 0-11 0				
IRON.			FOREIGN STEEL.		
	£ s. d.			Per Ton.	
Bars, Welsh in London . .	7 0 0-7 10 0		Swedish, in kegs (rolled)	none	
ditto, to arrive	6 10 0-6 15 0		(hammered)	20 0 0-21 0 0	
Nail rods	7 10 0-8 0 0		ditto, in faggots	22 0 0-23 0 0	
Stafford, in London . . .	8 0 0-8 10 0		English, Spring	18 0 0-23 0 0	
ditto	8 10 0-9 10 0		QUICKSILVER	0 1 11-2 0	
Hoops	9 5 0-9 15 0				
Sheets, single	9 10 0-10 10 0				
Pig, No. 1, in Wales . . .	3 15 0-4 15 0				
Refined metal, ditto . . .	4 10 0-5 0 0				
Bars, common, ditto . . .	6 0 0-6 5 0				
ditto, railway, ditto . . .	6 5 0-6 7 4				
ditto, Swed. in London . .	12 15 0-13 0 0				
In stock to arrive . . .	—				
Pig, No. 1, in Clyde . . .	2 15 0-2 17 0				
ditto, in Tyne & Tees . .	2 19 0-3 2 6				
ditto, forge	2 17 0-3 0 0				
Staffordshire Forge Pig . .	4 10 0-5 0 0				
Welsh Forge Pig	3 0 0-3 5 0				
LEAD.			SILVER.		
	£ s. d.			Per Ton.	
English Pig	21 0 0-22 0 0		Foreign	23 15 0-24 0 0	
Ditto sheet	22 5 0-23 0 0		To arrive	23 15 0-24 0 0	
ditto white	27 0 0-30 0 0				
ditto patent shot	25 10 0-26 0 0				
Spanish	20 0 0-20 10 0				
American	none				

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—The amount of business doing at present in our market is of a limited character, and some difficulty is experienced in effecting sales at current rates. A better tone seems at times to arise, but it is generally followed by inaction, and the result is that our market presents a more deadened aspect, which naturally intimidates speculators, and keeps buyers out of the market.

COPPER.—Although the enquiries have lately been very small, yet the standard has advanced, and, if any stir were visible, would lead buyers to look for an advance in fixed rates; but there is comparatively so few orders given out just now for shipment, that it is not looked upon with that anxiety which is generally manifested, and, consequently, our market remains inactive at fixed rates.

IRON.—A fair enquiry for rails exists, and some few contracts have been made at prices varying from 6l. 5s. to 6l. 10s. English bar-iron is also firmer, and ironmasters are holding for 6d. at the works. Staffordshire descriptions as before, quiet, but mostly steady at previous quotations. Swedish bars are dull at 12l. 5s. to 12l. 10s., according to specification. Scotch pigs have slightly fluctuated, but scarcely exceeded 6d. per ton at any time. The closing price on "Change to-day" was 55s. 3d. to 55s. 6d., mixed numbers, 56s. one month, g.m.b., f.o.b. in Glasgow.

LEAD.—The market is dull, and the last few days very little has been transacted; former prices have been upheld, but no advance obtained.

SILVER.—Until to-day the price gradually receded to 23l. 10s. per ton, but favourable intelligence has reached here from Hamburg of a good business taking place at improved rates, upon receipt of which sellers immediately asked higher prices: 24l. is now the price; possibly 2s. 6d. per ton less might be accepted.

TIN.—In English there is a moderate demand for blocks, principally for home consumption. Bars are not so much enquired for. Straits of fine quality sold to-day at public sale at 115l., three months prompt; 114l. is quoted for cash; Banca continues at 116l., cash. Deliveries are large in Holland.

TIN-PLATES.—Sellers adhere to last prices.

LIVERPOOL, AUG. 26.—Our metal market presents so little alteration since the date of our last report that there is no margin for remark. The demand for the ordinary description of manufactured iron is still limited, the tone of the market generally being, however, if anything, more encouraging, and it is not improbable that prices have seen their lowest. In Scotch pig-iron a fair amount of business has been done during the week, without at all causing any alteration in prices. There is very little disposition at the moment to do business either for export or for speculation. The shipments are still large, being 12,333 tons, against 10,786 tons for corresponding week of last year. The demand for English tin is uniformly good, and for tin-plates there appears to be rather more enquiry, especially for charcoal. Current quotations are readily obtained. Copper is in fair request, and prices remain unaltered. Lead is at present without change. The following are the quotations:—Iron: Merchant bar, 6l. 7s. 6d. to 6l. 10s. per ton.—Tin: Common block, 118l. per ton; common bar, 119l.; refined block, 121l.—Tin-plates: Charcoal, 8l. 3s. to 32s. per box; coke, 10l. 2s. 6d. to 25s.—Lead: English sheet, 23l. 10s. per ton; English pig, 21l. 5s.—Copper: Cake and tile, 107l. 10s. per ton; best selected, 110l. 10s. per ton; sheeting and bolt, 1s. per lb.—Yellow metal sheeting, 10d. per lb.—Steel: Blistered, 30l. to 40l. per ton; spring, 18 to 24l.; cast and shear, 50l. to 60l. per ton.

GLASGOW, AUG. 26.—Since our last report the price of pig-iron has experienced a decline of fully 1s. per ton, sales having been made to-day as low as 55s. 3d., cash, at which there remained sellers—buyers at 55s. There appears to be a lull after the late rise, and orders both for consumption and speculation have slackened, so that with a heavy make and diminished demand there is every probability of a further decline, more especially should the late purchasers on speculation be obliged to bring their iron soon on the market. No. 1, Gartsherrie, 59s. 6d.; No. 1, g.m.b., 54s. 3d.; No. 3, g.m.b., 53s. 9d. Shipments: Foreign, 6668 tons; coastwise, 5725 tons = 12,333 tons, against 10,786 tons last year.

NEW YORK, AUG. 14.—In bar-iron no movement has taken place, and it continues to be quoted \$45 to \$47-50 for common, \$55 to \$57 for refined. Scotch pig is quiet, and the price without change. We note the sale of 25 tons of hoop at \$67-50, at six months. For copper there has been but small demand, while the price has a downward tendency; there is but a small quantity on hand, the receipts being trifling this season. Sales of 70,000 lbs. have taken place at 21 1/2 c. for cash; also 8000 lbs. of old copper at 20 1/2 c. to 20 3/4 c. cash. In tin-plates the transactions have been entirely confined to the retail trade, with whom a good business has been doing at \$9-62 1/2 at six months, for 1-3 X. A brisk demand has sprung up for block-tin, and holders are firm, declining to sell except at an advance. The supply of Banca has materially improved, but the stock is still light; we observe that sales of 850 slabs have taken place at 29 c. cash, for Banca, and 28 1/2 c. for Straits. Spelter is quiet, at last week's quotations. At Boston, sales of 1350 bags of saltpetre, ordinary quality, have taken place at 8 1/2 c. per lb., at six months.

We stated in our last that a great reaction had taken place in the MINING MARKET, and that a larger amount of business had been transacted than we had noticed for months past, and this week the activity then observable has increased rather than otherwise, and we have again to report upon higher prices and a large amount of business transactions. The standard of copper has much improved, but we have not heard of any particular change in tin or lead, though lead mines are rather more sought for. A remarkable feature in the present rising state of the market, and one to which we call attention, as it confirms the correctness of our views reiterated week after week, that many good mines in the Share List were far below their real value, and should be purchased, is that the principal buyers of late have been Cornishmen and practical agents. By such parties the market has been cleared of several stocks, and the general public, who might have purchased low, will now, in the excitement, have to buy at the higher rates. Grambler and St. Aubyn and United Mines have both been greatly in demand all the week, and the former have risen to 140l., 145l.; and the latter to 90l., 95l. Both mines are greatly improving, and a further rise expected. East Basset has been in more demand, and has also risen to 100l., buyers; and great expectations of cutting the lode in the 80

in a few days. Basset, 190 to 200; Great South Tolgas, 15 to 16; P. Consols, 16 1/2 to 17, and remain flat. Hingston Down, 3 1/2 to 3 3/4, business doing. Rosewarne has been in great demand, and the price has advanced to 40, 45; on July 31, when these shares were 13 to 14, we called attention to the peculiarities of the district, and expressed our belief that the ore was coming in again; and as many persons purchased shares upon what we wrote, they have the satisfaction of seeing a very handsome profit. Hender, the adjoining mine, and a great favourite in the palmy days of Rosewarne, suffered also in its depression, but is now becoming enquired for, and shares are 1, buyers. East Russell has been better, and prices leave off, 5 1/2, 6 1/2. North Robert largely dealt in at 1 1/2, 1 3/4. Great Alfred not so firm, at 5 1/2; North Downs, 2 1/2, 2 3/4. West Grenville has been extensively dealt in, and leave off 8s. 6d. to 9s. 6d. Alfred Consols better at 8 1/2, 8 3/4. Great Wheal Vor in request, at 2 1/2, 3 1/4; Providence Mines, 60, 62 1/2; Wheal Margaret, 59, 61. Redmoor very largely dealt in, and prices leave off, at 6s. 6d. to 7s. 6d. South Tolgas have advanced, 7 1/2 to 7 3/4; East Tolgas, 50 to 55; West Basset, 21 to 22; Tincroft, 3 1/2 to 3 3/4; Tamar Consols, 12s. 6d.; Wheal Edward, 4 to 4 1/4; Trelawny, 2 1/2 to 2 3/4; Mary Ann shares rather flatter, at 46 to 47. Herodfoot, 6 1/2 to 7; Ludcott, 29s. to 31s.; Wheal Wrey, 3 to 3 1/4. West Trevelyan, 24s. to 26s.; a fine lode has been cut here, and the mine promises well. Carn Brea, 52 to 54, and in demand; Wheal Harriett remain more quiet, and leave off, 20s. to 22s. 6d. West Seton have been flatter, at 270, in consequence of the erection of new machinery, which may affect dividends for a time. North Basset, 9 1/2 to 9 3/4; at the meeting the accounts showed a profit on the two months of 413l. 11s. 3d., and a dividend of 5s. per share (1500l.) was declared, leaving 253l. 7s. 6d. Condurow, 60; in our last Journal we stated the returns had been 3200l.—this was an error, and, as the purser has set us right, we readily make the correction—the sale realised 2546l. 15s. 2d. Sortridge Consols in demand, at 22s. 6d. to 25s., owing to an important improvement. Wheal Kitty (Lelant), 8 1/2 to 9; Camborne Venn, 1 1/2 to 2 1/4; Penden, 3 1/2 to 3 3/4.

In the COAL MARKET, there has been a good amount of business done this week, best quality coals having been offered at a further reduction from last week's prices; but very few ships were left unsold, the supply on Monday being 105, of which 92 were sold. Only a limited supply of best seconds and Hartleys being at market, former prices have been realised. On Wednesday there were 58 ships at market, of which 49 were sold, former prices being easily obtained. Yesterday, there being a good demand for best coals, prices slightly advanced upon former rates, the last quotations were—for best Wall's End, 17s. to 17s. 6d.; best seconds ditto, 15s. 3d. to 16s.; manufacturers' and Hartley's, 13s. 6d. to 15s. 3d.; and steam coals, 21s. There were 100 ships at market, out of which number only 10 were left unsold.

COAL CONTRACTS.—100 tons of best Wall's End by the committee of the Great Synagogue, Aldgate, and 5000 tons of good gas coal by the Wall-sall Improvement Commission.

IRON CONTRACTS.—30 iron columns and spandrels, about 18 ft. high; 1300 yards 1 1/2-in. and 470 yards 1 1/2-in. wrought round iron bars, fencing, and wickets; also the windows and other castings for the New Cattle Market, Newport, Salop.

COPPER CONTRACTS.—200 tons of English tough cake by the Admiralty.

In SALTPETRE there has been a very active demand, and as the stock is declining holders are not inclined to sell except at an advance; a rise of 1s. per cwt. has taken place for refining qualities; sales of 30,500 bags of Bengal have been effected, 5 1/2 per cent. refraction, at 44s.; 8 1/2 to 7 per cent. ref., 41s. 6d. to 42s. 3d.; 6 1/2 per cent. ref., 43s. 9d.; 1 1/2 per cent. ref., 40s. to 41s. 8d.; and 360 bags for arrival, at 41s. 9d.; 410 bags of Bombay, 37 1/2 to 42 1/2 per cent. ref., have sold at 33s. to 33s. 3d.

At Redruth Ticketing, on Thursday, 2719 tons of ore were sold, realising 16,307l. 16s. The particulars of the sale were—Average standard, 12s. 4d.; average produce, 6 1/2; average price, 6l.; quantity of fine copper, 185 tons 11 cwt. The particulars of the month's sales were—

Date.	Tons.	Produce.	Standard.	Price per ton.	Ore copper.
July 22	2295	6 1/2	12s. 4d.	£5 4 6	£31 11 0
Aug. 5	3764	6 1/2	12s. 8d.	5 17 0	86 0 0
" 12	4539	6 1/2	12s. 2d.	5 8 0	83 11 0
" 19	4361	6 1/2	12s. 1d.	5 6 0	84 12 0
" 26	2719	6 1/2	12s. 4d.	6 0 0	87 18 0

Compared with last week's sale, the advance has been 2l. 3s. 3d. in the standard, and in the price per ton of ore nearly 2s. 9d. Compared with the corresponding sale of last month, the advance has been 5l. 8s. 9d. in the standard, and in the price per ton of ore 6s. 9d.

The following Dividends were declared during the month of August—

Mines.	Per share.	Amount.
Wheal Basset	£6 0 0	£3072 0 0
West Wheal Seton	7 10 0	3000 0 0
Carn Brea	2 0 0	2000 0 0
Cwmystwith	15 0 0	1920 0 0
Great South Tolgas	0 6 0	1890 0 0
North Wheal Basset	0 5 0	1200 0 0
Evan (Derbyshire)	1 0 0	1400 0 0
Bolton	7 0 0	1253 0 0
Providence	2 0 0	1120 0 0
Alfred Consols	0 4 0	1924 0 0
East Daren	3 0 0	900 0 0
Levant	5 0 0	800 0 0
Lisburne	2 0 0	800 0 0
St. Ives Consols	1 10 0	705 0 0
South Tolgas	1 0 0	512 0 0
Rotallack	2 0 0	500 0 0
Wheal Owles	5 0 0	400 0 0
Total		£22,706 0 0

At Wheal Owles meeting, on Aug. 20, the accounts for April, May, and June, showed—Balance last audit, 1507l. 17s.; sales of tin (less 1-25th duty), 4170l. 11s. 6d.; subside receipts, 166l. 2s. 2d.; sundry credits, 96l. 10s. 11s. 7d.—Labor cost, 2856l.; carriage, 151l. 19s. 7d.; merchants' bills, 901l. 12s. 9d.; advance, 159l. 10s. 6d.; by dividend of 400l. (5s. per share); leaves credit balance, 1471l. 8s. 3d. The profit on the three months' working was 363s. 11s. 9d.

At Providence Mine meeting, on Wednesday, the accounts showed—Balance last audit, 367l. 3s. 8d.; tin sold, 215l. 7s. 8d.; 4656l. 9s. 8d.; copper ore (due), 15s. 6d.; 137l. 10s. 10d.; sundries, 10s

PERMANENT WAY COMPANY.—A notification appeared in the *Stockton Hartlepool Mercury*, that this company was establishing a large foundry at West Hill, which would employ upwards of 700 hands, and that part of the galvanised sheet-iron, which was used over the refreshment department at the Manchester Exhibition was to be employed in roofing the new works. We have taken some pains to ascertain the correctness of the assertion, but find that the Permanent Way Company do occupy themselves with the manufacture of their materials, but confine themselves to the granting of patents. They have a sheet of drawings of the most approved forms of progress, and have just issued a circular to the persons all interested in keeping the permanent and chairs, which is well worthy of perusal. As this we cannot learn that anything remarkable in connection with the company has occurred.

ELECTRIC TELEGRAPH COMPANY OF IRELAND.—On Thursday the line, and materials of this company were submitted for sale by auction by Messrs. Simms, Wiliams, and Co. The line of telegraph is completely formed from Dublin, through Drogheda to Newtownards, a distance of 117 miles; while in Scotland it has been laid down from Dumfries to Port of Spittal, near Port Patrick, about 79 miles. The two portions may, as originally contemplated, be very easily connected by submarine telegraph from Donaghadee to Port Patrick, the distance being only about 25 miles, and thus a complete line of communication be formed between London and Dublin. It was stated by the auctioneer that an offer had been made by a contractor to complete the line for £5,000. At Messrs. Chinnock and Gaisworthy's sale, on Thursday, 3,000l. 6 per cent. debentures of the Grand Trunk Railway of Canada were submitted for sale, in lots of 500l. each. As the tender offered seemed to be taken in them by the persons present, a sharp competition took place, but the several lots were finally sold at prices varying from 69 to 72 per cent., or about 700l. per 1000l.

THE IRISH ENCUMBERED ESTATES COURT ceased to exist on July 28th. The total amount of purchase money that passed through the Court from the commencement is over 22,000,000l., of which about 3,000,000l. was paid by English and Scotch capitalists. The number of estates sold was 2380, divided into more than 11,900 lots and 8235 conveyances were executed by the commissioners.

Accident at Boiling Well Mine.—William Whitford was killed while working the kibble; he fell from the 40 to the 60 ft. level, and when found his back and all were broken.

Accident at Porkella United Mines.—Seven Lives Lost.—On Tuesday morning a run took place at these mines, the country under the shaft to the extent of 30 fathoms in length, 20 fathoms in width, and 3 fathoms in depth falling in, together with the slime, water, and stuff by which it was covered. The surface has sunk 30 ft. to 40 ft., and taken with it ten or a dozen dressing-frames. Captain Parry refers to the master in his report in another column. Upwards of 30 men were underground at the time, but all escaped uninjured with the exception of five children. Three were working in the shaft and the others in the ends of the deeper levels. No accident whereby so many lost their lives has occurred in a Cornish mine since the flooding of East Wheal Rose, by a sudden landslide, 13 years ago. The effect produced in the mine is described as wonderful: the noise from the air and slime meeting, and the fall of the slime, was louder than thunder, and was even heard, as terrific subterranean thunder, at surface. The mine, as just becoming an important one, and selling about 20 tons of black tin per month, at the loss was from 200l. to 300l. monthly; and as the mine is now filled with slime at the 24 ft. level, the continuance of mining operations on the set is very doubtful. The slime contained a quantity of tin, which is now irrecoverable. The whole neighbourhood is naturally in a very excited state.

LEAD ORES.

Mines.	Tons.	Price per ton.	Purchasers.
Sheel Frank Mills	100	£ 9 0 0	Panther Company.
Little Exmouth	80	10 12 6	Simms, Williams, & Co.
ditto	50	10 14 0	ditto

Sold on the 26th August.

Mines.	Tons.	Price per ton.	Purchasers.
Festminster	11	11 17 6	Walker, Parker, & Co.
Eastleigh	60	11 7 0	Newton, Keates, & Co.
Wynford Hall	9	12 7 0	ditto
ditto	6	15 10 0	Walker, Parker, & Co.
Mount Pleasant	20	12 5 6	Courage & Co.
ditto	10	15 10 0	Adam Fyton.
Finera Union	40	12 8 6	ditto
Penryn	21	12 5 6	ditto

BLACK TIN.

Mines.	Tons c. q. lbs.	Price per ton.	Amount.	Purchasers.
Wyns	1 9 2 3	£25 10 0	£ 23 4 6	O-Chyndour.
ditto	5 11 4	61 7 0	358 3 11	Williams & Co.
Eden-an-dred	0 14 0 15	69 12 6	49 5 3	ditto
ditto	0 37 2 27	58 0 0	51 7 11	ditto

Sold on the 26th August.

Mines.	Tons.	Price per ton.	Amount.	Purchasers.
Great Hewas	0 18 3 24	67 12 6	469 17 5	Carver & Sons.
ditto	0 17 0 24	60 0 0	51 12 10	ditto

Sold on the 25th August.

Mines.	Tons.	Price per ton.	Amount.	Purchasers.
ditto	8 10 3 20	67 12 6	580 0 3	Trethellan.
ditto	1 19 8 0	67 12 6	129 18 9	ditto

Sold on the 7th and 24th August.

Mines.	Tons.	Price per ton.	Amount.	Purchasers.
St. Austell Cons.	9 0 0 0	64 5 0	578 5 0	Enthoven & Sons.
ditto	1 10 0 0	64 5 0	85 7 6	ditto
ditto	0 8 0 24	51 0 0	20 18 11	ditto

Sold on the 25th August.

Mines.	Tons.	Price per ton.	Amount.	Purchasers.
Wendron Cons.	17 18 3 5	—	1175 14 5	Chyndour.

COPPER ORES.

Sampled Aug. 11, and sold at Tabb's Hotel, Redruth, Aug. 26.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
United Mines	85	£7 10 0	South Canadan	68	£5 18 6
ditto	70	5 15 0	ditto	60	9 12 0
ditto	70	5 8 6	ditto	39	9 13 0
ditto	57	3 3 6	ditto	21	6 14 6
ditto	55	3 1 0	Fowey Consols	104	7 3 6
ditto	51	4 1 6	ditto	83	6 6 0
ditto	50	4 0 6	ditto	74	7 11 0
ditto	48	5 9 6	ditto	69	7 8 0
ditto	44	9 15 6	West Wheal Darnell	82	5 2 0
ditto	36	2 10 0	ditto	63	4 11 0
ditto	22	1 13 0	ditto	45	3 12 0
ditto	20	3 19 6	ditto	41	6 11 0
ditto	17	5 18 0	South Cinnia	61	4 10 0
ditto	12	5 12 6	ditto	60	9 8 0
Great Wheal Busy	93	2 5 0	ditto	31	4 0 0
ditto	72	2 12 0	East Wheal Tolgus	59	3 18 0
ditto	70	3 18 0	ditto	59	3 18 0
ditto	57	4 3 0	Gramb. and St. Aubyn.	64	19 7 0
ditto	44	2 9 0	ditto	45	14 18 0
ditto	43	5 8 6	Tresavean	46	2 13 0
ditto	24	2 2 6	ditto	41	2 17 0
South Canadan	77	6 16 6	ditto	9	2 11 0
ditto	74	17 14 6	Creeggrawse	40	—
ditto	73	6 16 6	Wheal Comfort	6	1 4 0

TOTAL PRODUCE.

Mines.	Tons.	Price.	Mines.
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Notices to Correspondents.

* Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journals should be regularly filed on receipt: it then forms an accumulating useful work of reference.

CASE-HARDENED IRON.—Mr. T. W. Dodds was spoken of in your valuable Journal, a few weeks since, as having invented a new system of case-hardening iron—or, as he terms it, converting the surface of iron into steel. Can any of your correspondents inform me whether any of the improved metal is in the market, and, if so, at what price? Also, wherein Mr. Dodds' metal differs from ordinary case-hardened iron?—R. G.

COAL IN CANADA.—I regret to learn that the discovery of coal in the vicinity of Bowmanville has been proved to be a fiction, but yet I must contend that more attention should be given than has hitherto been to the coal-like substances which are known to exist in the country. The forests must necessarily diminish as the country becomes more thickly populated, and a district without fuel enjoys but a sorry position in all that tends to make it commercially great. Consider the position of Sussex, in England; the iron manufacture there was formerly carried on upon an extensive scale, but want of fuel has altogether banished it from the country, whereas, if proper means had been taken long since to seek for coal, it is probable, since many still contend that coal is to be found in the south-eastern counties of England, that their commercial prosperity would be much greater. In Canada a thorough series of explorations should be made, and every attempt made to discover some mineral capable of being applied as a fuel.—T. C.: Montreal.

COPRAO SMELTING COMPANY.—It is now nearly nine months since our superintendent, Mr. Thomas, left for Caldera. I have the greatest faith in the directors, and the efficient staff they have dispatched to Chili. At the same time I am perfectly aware that a sufficient period has not elapsed for them to commence operations, and these certainly should not be hurried. In the meantime I would venture to suggest that it would be a source of great satisfaction to many of the shareholder residing at a distance, and who have not the advantage of personal communication with the secretary, if from time to time, through the medium of your columns, some information were accorded as to the progress of the construction of the furnaces and the erection of the buildings. The proprietors would then be able to form some opinion as to the period when smelting would commence.—H.: Liverpool.

PORT PHILLIP GOLD MINING COMPANY.—The accounts which have lately come to hand are certainly of a most encouraging nature; but the last report of the directors is very vague, and demands some explanation. I perfectly agree with Mr. C. S. Richardson, that it is to be hoped the dividends will not be paid as a Mexican and South American. Much has been spoken about the respectability of the company, and the high character of the directors. The same was said of those of the Mexican and South American. I wish to impugn the conduct of no one, but the experience of the past two years tells us to watch narrowly the conduct of those in office, however exalted their position may be: it is a duty we owe not only to ourselves, but likewise to them. Directors are but fallible men; they often wish to make things pleasant when it would be better for the interests of all concerned if the naked truth were revealed at once. Above all things ambiguous reports should be avoided.—J. H. G.: Stockbridge.

J. T. (Nottingham).—A letter addressed to Mr. W. S. Trotter, I, Great Winchester-street, would, no doubt, meet with a reply. We are not aware who were the late directors of the company, nor their residence.

GOLD REDUCTION.—However much our modern alchemists may differ as to their mode of extracting gold, on one subject they are perfectly agreed—that is, that their theory should rest upon mere assertion. The magnets which were invented by Mr. Harris did rotate once in presence of the *Times* reporter, and the *Providence Works* were there daily chronicled, and thence supposed to be established. Unfortunately, however, this was but a spasmodic effort, and shortly afterwards the works were closed. We now hear much of the brown oxides: Mr. Clement says the material to reduce this is borate of soda. Mr. Squire claims the invention, and so does Mr. Kempton, of Coal Harbour-lane. I suggest that it would be much more satisfactory to the public if these gentlemen were practically to show they could carry out their processes, which are to be the means of enriching not only themselves but all those connected with them. I am a shareholder in a company which holds its adjourned meeting this week, in London, and which I cannot attend, on purpose to hear the result of some samples that Mr. Squire has tested. I allude to the Quartz Reduction Company, an association formed on the debris of the *Agua Fria*. If Mr. Squire be right, he says that we ought to be the richest company in the world. I trust he will make his words good. Should such be the case, his photograph, framed in gold of his own making, ought to be in the possession of every one of the fortunate shareholders he will then have so materially benefited.—J. P.: Zetzer.

Mr. RICHARD'S New Work on MINING.—Will Mr. Richard kindly inform his subscribers, through the medium of your Journal, when they may expect to receive his new work on mining, as a considerable period has elapsed since the date of his advertisement?—EXPERIMENT.

JOSEPH WATSON'S CONSOLS.—I perfectly agree with your correspondent, "P." that a public account is far better than an authorised report. From the one I have received from the secretary of this meeting, I perceive that but few persons were present; consequently, whatever resolutions this select body choose to put they could do so in any form they pleased; and this necessarily becomes binding on all who are not present. If the mine be well managed it is a matter of perfect indifference who the secretary may be, or who comprise the committee of management, so long as they do their duty without fear and affection to the general body of the proprietors; and one shareholder should not have priority of information over the other. The best plan to obviate this difficulty is publicity; and this carried out, in its full integrity will never injure a legitimate mine, though it may damage a bubble speculation.—T. L.: Brighton.

PENROBE AND EAST CRINNIS MINE.—We cannot publish the letter of "Visitor." There is no resident secretary; and if there be any grounds for his other statements, he should address the directors on the subject.

NEW LINARES.—This company was stopped about three years ago, and the property sold by auction at Garraway's, on May 10, 1855, to Mr. Gostley, for 2750*l*. A new company was formed, which failed to find a sufficient number to take up the shares, and it was again sold by auction; and the reason the balance has not been divided arises from the delay in obtaining certain documents from Spain to complete the title, in which country it is well known they take as many months over such matters as we do days. We are informed no party can be more interested in an early distribution of the funds than Mr. Thomas Field, as he holds about one-third of the shares.

ROSWALL HILL AND RANSON UNITED.—The officers of the company are on the mine. Mr. B. Treweek, jun., is the purser. The office of reference in London is Mr. T. Watson, 2, Crown-court.

WHEAL BAL.—I presume "A Constant Reader," in reference to me, in your last Journal, means insulted, not "assaulted"; for I assure you I was not assaulted at Wheal Bal, unless the foolish practical joke played off on me can be termed such. I may as well here remark that, previous to the meeting in question, I was always in favour of giving the merchant adventurer the preference; but after what I then experienced I became convinced to the contrary, and felt how different would things be if no adventurer had been allowed to supply this mine.—HENRY VIKER.

CORNISH COPPER SALES.—Each week you give a statement of the comparative variation in the price per ton of ore; as the results you arrive at are to me a complete mystery. I should be glad if some of your correspondents would state the readiest mode of calculating the variation.—F. H.

MEXICAN AND SOUTH AMERICAN COMPANY.—It appears that the fearful liabilities of this company will have to be borne by less than half the shareholders, the others either escaping all liability, or being out of reach. Under these circumstances, I hope, as an unfortunate holder, that the official manager will make an effort to settle the claims of the large creditors for 15*l*. in 1*l*. Arrangements of this kind have been made in several cases recently in the Winding-up Court. Mr. Schneider seems to have got out of his shares very cleverly, and so escaped being fixed as a contributory. I bought my shares on the strength of his name, believing him to be a keen man of business, and wide awake. Well, perhaps he is.—SIMPLEX.

WHEAL ARTHUR.—I cannot understand why these shares are at so low an ebb; the price named in your last Journal was not half the value of the materials. The public may not be aware that at Wheal Arthur there are several important points to come off in cutting three lodes, and cross-cutting the Calstock Consols lode—one of the best in the locality. My advice, and am a large shareholder myself, is to hold on, and not to be the victim of the benefit of our country and patience. I see one one is charging Capt. T. Carpenter with mismanaging the mine. I do not believe anyone could do better; but it is an old saying and a true one, "A good mine makes a good captain," and when Capt. Carpenter cuts those lodes rich, he will be extolled, and will, no doubt (as is now becoming quite a custom), be presented with a piece of plate. I do not mind the plate if he succeed in the great object—cutting the three lodes rich.—FAIR PLAY.

SNAILBEACH MINES.—This is strictly a private property, in the hands of a few individuals. No shares were ever in the market. It is stated that the annual profits for some years has been over 30,000*l*.

LONDON AND VIRGINIA GOLD AND COPPER MINING COMPANY.—This company is now in course of winding-up, and although it was the unanimous wish of those present at the last meeting to adopt that course, it was a mere chance that it was carried out. By the rules, to pass a resolution for winding-up, four-fifths of the proprietors must be present, either in person or by proxy, and the proceedings nearly fell to the ground; when it was discovered that two or three were in attendance who had not paid their calls, and by handing in their cheques made up the requisite number. The resolution passed on Aug. 19 must be confirmed at a subsequent meeting, and if the proprietors neglect to send in their proxies the agreement for winding-up will be rendered nugatory, and the expenses consequent on carrying on the concern continued. Mr. Clement stated that it would require 15,000*l*. to sink the shaft to the necessary depth, and to erect the buildings for operating upon the ore on the spot, as it would never pay for carriage to this country.

CONDORRO MINING.—In our last Journal, we stated that the returns had been 3200*l*. which was an error, and the purser has set us right. The sales realised 2540*l*. 15s. 2d. for the two months, but the loss was, as we stated, about 7*l*. The purser also complains of our remarks, which were made, however, upon information furnished to us, and upon which we considered we could rely.

CALSTOCK CONSOLS MINE.—Interested parties, principally jobbers in shares, are just now making combined efforts to "rig" the shares in this mine, as was done in the adjoining mine, Wheal Edward. There is no doubt that Calstock Consols is a promising concern, and has a good lode, but not anything like the value or quantity of ore stated in the notices which have appeared in the papers. There is much to be done, and a great deal more ground must be opened before it can become a paying concern. Such puffing as is being pursued in pushing the shares beyond their fair value only tends to damage the mine, as well as all other genuine mining adventures.—A LOOKER-ON.

CHANCELLORSVILLE FREEHOLD COMPANY.—I perceive by a notice in the *Mining Journal* that the directors of the Anglican Smelting and Reduction Company have extended the time for the shareholders of this association to come in. I have no doubt that the object of the new company is legitimate, and that their prospects are based upon truth. The public have now a greater security than they previously had, prior to the late decision of Seymour v. Bagshawe. I cannot, however, but think that greater confidence would be given to many of the holders in the Chancellorsville if the directors or the secretary (Mr. W. S. Trotter) would condescend to afford some explanation as to how the large amount previously subscribed has been expended. In the worst days of Californian mismanagement some statements were published as to the progress of the undertaking, but this the Chancellorsville never did. It is to be hoped that the Anglican, at the same time they avail themselves of the experience of the old company, will likewise be careful to eschew its errors.—SCRIP.

* The MINING JOURNAL can be procured at our office by Eleven o'clock on Saturday morning. News men, therefore, can make the necessary arrangements to have the Journal at the several stations in time to forward by the mid-day trains, enabling many of our subscribers to receive their copies on the day of publication.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, AUGUST 28, 1858.

The returns from the Board of Trade show a decrease in the exports from the United Kingdom of 1,207,335*l*. for the month, and of 8,566,112*l*. for the seven months, both ending July 31, as compared with the corresponding periods of last year; but this result has been so fully calculated upon that the official announcement creates no surprise. The various markets which are the chief consumers of our produce and manufactures, especially those of the Australian colonies, have been so overstocked that a secession of orders has been the consequence, while speculative shippers have been deterred from further consignments by the heavy depreciation already sustained in the price of goods sent forward.

The accounts furnished by the present official returns respecting the imports and exports of the precious metals are highly satisfactory, and appear as a counterpoise to the decrease in the general exports, if such can be considered as discouraging, which we do not admit, under the existing condition of our colonial and foreign markets. During the month of July the amount of 2,335,411*l*. was received in gold and silver, and 1,841,611*l*. exported, so that there was a balance of 493,800*l*. in favour of this country. For the seven months the total shows 18,506,381*l*. imports, and 12,582,431*l*. exports, so that the excess of imports was 5,923,950*l*. The gold received was 14,147,098*l*. and silver 4,359,233*l*. while the gold shipped from our shores was 7,952,404*l*. and silver 4,630,027*l*.; showing, consequently, a great balance of gold imported over gold exported, but a slight excess of silver exported over the quantity imported. Australia, necessarily, was the chief source of supply of gold, and sent to the value of 5,305,730*l*. and Mexico and South America remitted 4,681,747*l*. thus making 9,987,477*l*. without specie of any kind being shipped from this country to those places. The transactions between the United States and Great Britain give a balance of 3,002,685*l*. to the benefit of this country, the imports being 3,138,067*l*. and the exports 135,382*l*. The Hans Towns left 473,875*l*. with us, the difference between 1,078,094*l*. and 604,219*l*.; Portugal, 387,888*l*. the excess of 434,615*l*. over 46,727*l*.; and Belgium, 274,219*l*. the imports having been 450,446*l*. against 176,227*l*.

The places with which there were transactions in the precious metals unfavourable in balance to England were unimportant, excepting as respects France, which sent us 1,787,745*l*. almost all in silver, and took 7,305,765*l*. nearly all in gold; so that 5,518,020*l*. stands against this country for the seven months: 3,333,969*l*. in silver, with the exception of 61,408*l*. was sent to Egypt, in transit to India and China, against 831,627*l*. received through the same channel; so that there is 2,502,342*l*. against us in balance, but as these remittances were almost exclusively for

the purposes of this country in the East, arising out of the Indian revolt and Chinese war, it cannot be regarded in the light of general exports over imports.

We find that the computed real value of merchandise imported in the United Kingdom, from foreign countries and British possessions, for the three months ending June 30, was 47,193,604*l*. being 9,748,541*l*. from British possessions, and 37,445,063*l*. from foreign countries. For the six months up to the same date the total value was 69,677,151*l*. of which 56,446,863*l*. was from foreign countries, and 13,230,268*l*. from British possessions. Australia generally sent us a total value of 1,839,495*l*. for the quarter, and 2,116,712*l*. for the half-year. During the latter period this country received merchandise to the value of 921,883*l*. from Victoria; 674,229*l*. from New South Wales; 300,438*l*. from South Australia; 183,733*l*. from Tasmania; 22,322*l*. from Western Australia; and 14,112*l*. from New Zealand.

The dispute between the colliers and the colliery proprietors of South Staffordshire continues, and the feeling of disaffection between employers and employed is strongly manifested in Yorkshire; yet, from the fact of the colliers themselves becoming daily more convinced of their error in acting as they have done, it is confidently anticipated by impartial observers that the difficulty is now on the point of removal. The orators who attempt to lead the colliers on in their steps against the masters themselves complain of the want of unanimity amongst the men, and although resolutions in accordance with the wishes of the ringleaders are carried at each gathering, it is evident, from the few who vote, that the majority are very indifferent upon the matter, if they be not actually opposed to the course they are pursuing. The colliers are beginning to feel the privations which they have had to undergo very acutely, and there are, doubtless, large numbers of them who would willingly return to work at the reduced scale, did not the fear of incurring the displeasure of the body of their fellow-workmen on strike prevent them.

The position of the coal trade is such that it is questionable whether the masters have been put to any inconvenience by their pits remaining idle, and they are not, therefore, likely to make any alteration in the terms proposed. The idleness of the men has not resulted in any scarcity of coal, and the attempts to induce the more intelligent of the colliers to turn out have been altogether fruitless, although every exertion has been used by those on strike. At the meetings held, the speakers cautioned the men to keep peace and good order, but it is indirectly intimated that if the men at work do not immediately turn out, those on strike will hold meetings at five o'clock each morning to endeavour to induce them to do so, until both "thick" and "thin" men obtain the advance. That combination amongst workmen may occasionally be requisite to prevent employers taking undue advantage we can allow, but we deny that, in the present instance, the men have anything to justify their conduct. To contend that a man should be compelled to work at a price to be fixed by masters only would be, indeed, illiberal; but workmen should ascertain whether circumstances admit of a higher wage being paid before they resort to measures which must result in loss to themselves.

The question of supply and demand must always be considered in connection with wages, and we believe that no class of men know better than the colliers that the demand both for iron and coal is very limited at present, and that the profits of the masters have been reduced in a proportion fully equal to the decrease proposed in the wages of the men. Although the strike appears extending over a larger area, it is considered doubtful whether the number of turn-outs has increased, as at several of the more recent meetings it has been observed that colliers have taken very little part. Much regret seems now to be felt amongst colliers that there is no means of punishing those who, by the ill use of their powers of speech, cause so much privation to their fellow-workmen; but we think each should consider that he has but himself to thank for his misery, since the law is sufficiently strong to protect him from harm, if he continues in the course which justice and common sense dictate.

The usual letter of our Wolverhampton correspondent, which appears in another column, is particularly interesting this week. His accounts of the trade of the district is certainly more encouraging, but he holds out no hope of the colliers obtaining their demands; indeed, his remarks fully prove that the masters cannot, in justice to themselves, consent to more favourable terms with the colliers. He does not predict any period for the termination of the strike; but as he refers to the posting of placards of what may be considered a conciliatory character, it is hoped that the opinion that it is near its conclusion is not without foundation.

A case of great importance to the commercial interest, as deciding the LIABILITY OF DIRECTORS (SCOTT AND ANOTHER v. DIXON), and very similar to that of SEYMOUR v. BAGSHAW, has just been decided against Mr. DIXON, the managing director of the Liverpool Borough Bank, by Mr. BARON MARTIN, at the Liverpool Assizes. The plaintiffs were shareholders in the bank in question, and the defendant one of the managing directors of the same bank. The plaintiffs purchased ten shares in August last year, and had since been called upon for a 5*l*. call under the winding-up. The action was founded on the well-known rule of law, that where a man has been induced to alter his position for the worse by the misrepresentations of another, he is entitled to be indemnified against any loss he may have sustained by reason of such transaction. It is a rule based on common sense, and built up with the strictest principle of what is just and right. The directors were, in this instance, as directors are in many commercial undertakings which have not yet come under the Winding-up Acts, over anxious to make the bank appear in a more prosperous condition than it really was, and acting upon the wretched doctrine that "the end justifies the means," aided in perpetuating a system of deception which had long been practised against the shareholders, and declared a dividend when the concern was really insolvent—the end being to prevent mistrust being created in the minds of the public, and, consequently, a run upon and the stoppage of the bank. Mr. DIXON, the defendant, appears to have entered upon the office of managing director almost solely for the purpose of remedying abuses; but he is this as it may, he has actually stated that he was cognisant of their existence, and had expressed his intention of removing them. Unfortunately for his own reputation, he allowed the persuasions of his co-directors, and the fear of exposure of the wretched condition of the bank's finances, to induce him to concur in the publication of a report which, although perhaps not absolutely incorrect, led to inferences totally different to those it should have done.

The Borough Bank was established in 1837 upon the remains of a bank belonging to Messrs. HORSFORD and Co., and a deed was then entered into between the partners which, amongst other things, provided that the business of the company should be conducted by directors; that the directors should keep the necessary and proper books of account; that they should half-yearly settle, adjust, and balance the said books, and make out and declare a full, true, and explicit statement and balance-sheet, exhibiting the debits and credits of the said company, the amount and nature of the capital and property thereof, and the then true-estimated value thereof, with the amount of the company's negotiable securities then in circulation, and the profits and losses of the company; and that the directors should, at the July meeting, exhibit to the proprietors assembled a true and correct summary and balance-sheet, and report of the profits and accumulations or losses of the company from the time of the commencement of the business, or from the end of the business included in the last preceding report, and of the state and progress of the affairs of the company up to, and including, the 30th day of June last preceding. Yet, notwithstanding these provisions, the directors of the Liverpool Borough Bank, the defendant in this action being one of them, were inconsiderate enough, not to use a harsher term, to declare dividends out of capital, and to represent the bank in a flourishing condition when it was within a few months of stopping; adding, moreover, a statement to the effect, under the most unfavourable circumstances consistent with probabilities, that they would be enabled to declare a dividend at the same rate without encroaching upon the capital. This report induced the plaintiffs to take advantage (?) of the position of the shares in the market, and purchase them, believing them to be a good investment—the plaintiffs being hard-working men, employed as warehousemen in respectable houses in Liverpool, and not speculators, had combined to purchase the ten shares—the lowest number transferable—because neither of them could afford to buy ten of himself. The bank stopped about two months after they had bought their shares, and they very properly brought an action to obtain indemnity for fraudulent misrepresentation, and the verdict has been given in their favour, being a similar decision to that given in the case of SEYMOUR v. BAGSHAW, above referred to.

The influence of such decisions upon the minds of capitalists must be satisfactory, since it affords a sure proof that the law gives them ample

protection against the malpractices of those entrusted with the management of affairs; and as the penalties for concurring in the publication of fraudulent statements are the same as for actually making them, it must be apparent that if there be but one gentleman on the board who values his reputation, the shareholders will be comparatively safe.

STEEL STEAM-SHIPS.—Mr. Clay, it appears, is succeeding well in his attempts to introduce Riepe's metal; two more vessels, entirely of this material, being now in course of construction at Mr. Miller's yard. The use of steel appears likely to become pretty generally employed in place of iron, an equal strength being obtained with much less weight. On the Mersey four steel vessels are building, and on the Clyde five. In all cases where a light draught of water is a desideratum, steel has undoubted advantages, and the manufacture of cheap steel should, therefore, be encouraged to the greatest possible extent.

THE NEW GOVERNMENT MINE INSPECTOR.—(From a Correspondent.)—The selection made from the list of candidates for the office of Inspector of Coal Mines, rendered vacant by the decease of Mr. Herbert Mackworth, has given very general satisfaction, and it is now beginning to be acknowledged that a Conservative Ministry, although they promise less, confer greater benefits upon the country than any other. All appointments to important offices are made in consideration of merit alone, and regardless of the family connections, or of the patronage enjoyed by the candidates. During Mr. Lionel Brough's period of office in South Staffordshire he has proved himself to be indeed the miner's friend, and as he has acted in the most gentlemanly manner in compelling the colliery proprietors to comply with the Act, no one has felt its provisions to be oppressive, the result of his conduct being that he has gained the respect and esteem both of the colliers and colliery proprietors. In losing Mr. Mackworth the colliery interest lost a valuable Government officer, but it is generally considered the district formerly under his care (Monmouthshire, Gloucestershire, Somersetshire, and Devonshire) will be equally well inspected by Mr. Lionel Brough, who has been removed there. Although it is probable that Mr. Brough will take a less active part in the proceedings of the local scientific institutions, he will, doubtless, be quite as attentive to the duties of the office, whilst as regards his practical and scientific ability there can be no question. Mr. Henry J. Longridge, who has been appointed to the South Staffordshire district, has had much practical experience, and it is thought he will prove a worthy successor of Mr. Brough.

COLLIERY ACCIDENTS.—EASE FOR THE WOUNDED.—At the inquest upon a sufferer from the explosion of fire-damp in the Croft Colliery, Mr. Matthias Dunn, the Government Inspector for the district, suggested that it would be far more humane to provide a sort of "palanquin" in which the injured man might be conveyed in comfort, than to continue the present custom of bringing them to the bottom of the shaft in a "boggy," and afterwards to squeeze them into a basket, with an iron bar over the top, hoist them up thus, and then convey them home over the rough roads in an open cart. The conveyance proposed is of a very simple description, and the expense of making it quite insignificant: a few poles to form the framework, and a piece of canvas on which to lay the sufferer, being all that is requisite. So that cost cannot be alleged against the introduction of the humane suggestion of Mr. Dunn.

THE STRIKE IN STAFFORDSHIRE.—(From a Correspondent.)—Your Staffordshire correspondent last week explained the position of affairs between the colliers and their employers in South Staffordshire, and it is gratifying to find that there is less disposition to resort to violent measures than was formerly observable. At the Wednesday meeting a proposition was put, "that the colliers of Wednesday should put down their tools until all had obtained 5s. per day," and carried—amidst exclamations, however, that no Wednesday men were present, and that the voters were all from Bilston. That the Wednesday men were absent reflects the highest credit upon them, and fully proves that their intelligence is far greater than that of the fellows who have used their efforts to reduce them to a state of misery. It has frequently been asserted, and apparently with much truth, that the colliers, as a body, are willing to listen to reason, and to make concessions when it is proved to them that concessions are necessary; it can, therefore, only be regretted that they are weak enough to allow the false counsel of a few of their number who may happen to be evil disposed to influence them. The extension of education will, no doubt, ultimately remove the difficulty, as the men will then be enabled to see that many of the arguments adduced, with a view to justify their conduct, are fallacious in the extreme. Amongst those arguments we may refer to the announcement made, that the men had already obtained something from the strike, because Messrs. Blackwell, of Russell's Hall Colliery, Dudley, had given notice to their butties that they must no longer keep public-houses, and that if the men had money stopped from them for drink the masters would restore it. Now, it is well known that an agreement had been made to prohibit butties from keeping public-houses previous to the present strike, and that the turn-out has in no way influenced the notice. The agitators' other arguments might be explained in the same way, and there is no doubt that it is some of the more intelligent colliers were to use their abilities in proving that the interests of the collier and the coal owner are identical, which is the fact, all would be benefited.

The Wildberg Great Consolidated Mining Company held a preliminary meeting on Monday, to inform the English shareholders of their affairs, as in conformity with the statutes they are compelled to hold the meeting at Cologne, although it appears there were very few native shareholders. This undertaking was originally introduced as one of extraordinary promise, and an enormous amount had been given for the property, in addition to extravagant charges for work done, amongst which one item is worthy of notice—the law costs being put down at nearly 20,000*l.*, the total expenditure being 163,610*l.*; and, as the Chairman stated, in three years ending June, 1857, the returns were a fraction under 10,000*l.* Notwithstanding this unsatisfactory state of things the directors persevered, and the report, which appears in another column, shows how far they have succeeded. The Chairman congratulated the meeting that, although the council did not deem it prudent at present to declare a dividend, for the first time he had the pleasure to announce that they had made a profit, as the amount realised during the last year was upwards of 14,000*l.*; and each succeeding report showed a steady increase in their returns. The accounts would have presented even a more favourable appearance but for the fall in the price of lead, which made a difference of 1080*l.* Their liabilities, too, which were estimated at 2000*l.*, due to various merchants, were discovered to amount to 3430*l.*; but with all these disadvantages the net profit on the year's operations was 3016*l.* 13*s.* 10*d.* The Chairman anticipates, from the steady manner the works are progressing, by the next meeting they will be in a position to declare a dividend, and from the able practical management of their property, combined with the cautious supervision of the council, the proprietors may confidently hope for a long period of prosperity.

GALVANOPLASTIC.—An invention, having for its object the covering of metals by the alloys of other metals, as well as metals by means of electricity, has been provisionally specified by Mr. E. C. Shepard, of Jermyn-street, St. James's, who some time since rendered himself conspicuous by his invention for producing gas by decomposing water by electricity—an invention by which he asserted he could obtain water gas at a price which would admit of its general introduction. It will be recollected that he was favoured with the highest patronage both in France and England, and that a company was formed—the Electric Gas Company—which was to return immense profits. How far the invention succeeded the shareholders in that company can best determine. The present invention relates, first, to producing, by means of an electric current and an anode or plate of silver, alloyed with nickel, a deposit of alloy of silver and nickel. After having dissolved the silver in nitric acid, and evaporated it to dryness, he dissolves it in pure water, and puts it into a vessel by itself, and he then puts into the silver solution a solution of carbon of ammonia until it is clear. He then dissolves the nickel in nitric acid, in another vessel, in a similar manner, and puts into the nickel solution a solution of common potash or carbonate of potash, then takes the precipitate which falls in powder, and washes it three or four times in pure water, until it is sweet or clean; this precipitate or powder he then puts into a solution of carbonate of ammonia, and dissolves it until it becomes a clear solution. He then mixes all the solutions together of the nickel and silver in one vessel. For plating he uses an anode, or plate, made of one part silver to two parts nickel. To make the anodes, or plates, he melts the silver and nickel together in one vessel, and mixes them well by stirring them, and afterwards runs them

into forms. When working the solution constantly, if it does not work rapidly he puts three, four, or more ounces of cyanide of potassium into about 50 gallons of the solution. The solution should be agitated or stirred up every morning before working it. The advantage which the silver and nickel combined together has over silver plating is that the nickel makes the silver harder, and bears a better polish, in addition to its greater economy. In mixing the two solutions together of nickel and silver, he mixes them in about the proportion of one part silver with two parts nickel. To give to iron, zinc, or other metals, the appearance of bronze, brass, copper, &c., he dissolves seven parts of cyanide of potassium in pure water in a vessel by itself; he then dissolves one part of sulphate of zinc, or white vitriol, also in pure water by itself. He then mixes the cyanide of potassium, or a portion of it, with the sulphate of copper solution, until it becomes a clear solution, and he then mixes the sulphate of zinc solution with the cyanide of potassium, until it becomes a clear solution. After this he mixes all the solutions together in one vessel, and puts it into (sic) about 2 ozs. of caustic potash and 4 ozs. or more of "cream of tartar" (sic). When the metals are put into the solution for plating, if not quite smooth, add more "cream of tartar." To make the colour of the brass red you use a copper anode. When you want a rich colour, like gold, thrown upon any metal, the solution should be made warm or hot whilst working.

REPORT FROM NORTHUMBERLAND AND DURHAM.

(FROM OUR CORRESPONDENT)

Aug. 26.—The Coal and Iron Trades must be reported as still slightly improving; it is highly probable that an important improvement will take place during the ensuing autumn. The total number of blast-furnaces in this district, which includes those of Bolckow and Vaughan, &c., is 63; and the number in blast at present is 51. The number of furnaces at the Consett Iron-Works is 18, of which only 2 are at present out of blast.

The meeting of the members of the Institution of Mechanical Engineers at Newcastle, during the present week, may be characterised as an event of no slight importance. Apart from the interest which must always be attached to such meetings of men practically engaged in the most useful arts, a peculiar interest is attached to such a meeting being held in Newcastle, as this has been the birth-place of many men who have given a great impetus to those arts. We need scarcely mention the name of Stephenson to prove this position; and, curiously enough, the first paper read, after the opening of the proceedings on Tuesday furnished another example of the same kind. This was the paper by the local Chairman of the institution, Mr. Armstrong, on "Water-pressure Machinery;" it is an able and elaborate account of the application of water-pressure as the motive power for working machinery. This mode of applying this power is the invention of Mr. Armstrong, who has in a comparatively short period brought his machines to great perfection and efficiency. They were first applied for the purpose of hoisting materials in loading and unloading vessels, &c., where cranes worked by manual labour were formerly employed. They are now, however, employed for a great variety of purposes—opening and shutting dock gates, working machinery for raising and crushing ores, &c., from mines. They have been applied for those purposes at the mines of Mr. Beaumont, at Allenheads, in the county of Durham, &c.—indeed, there appears to be no limit to their application. The invention, it is plain, is a very great acquisition; and Newcastle may henceforth rank Mr. Armstrong among her choicest sons, who by their genius and industry have ennobled themselves, and materially benefited their country and the whole human race. The first mode of accumulating the power necessary to work those engines, and the most common mode of doing so at present, is by a head of from 200 to 300 feet of water, which is conveyed in pipes to the point where the engine is placed, and the common street water-pipes are in many cases used for that purpose. But Mr. Armstrong does not confine himself to this mode; in some cases a tower has been built, and the water pumped up by steam-engines to the necessary height, but more commonly he uses what he terms an accumulator; this apparatus being a reservoir giving pressure by load instead of by elevation; the water being forced into this accumulator by a steam-engine. A great number of steam-engines are, it appears, employed for this purpose in different parts of this country. Now, as to the application of this cheap and efficient power in situations where water is plentiful, and a sufficient head is naturally obtained, there can, we think, be but one opinion on the subject. The machines so applied are at once economical and effective in the highest degree; but where it is necessary to employ the steam-engine for the purpose of accumulating the necessary force, we confess we have some doubts on the subject; and we must say, also, that we think this part of the subject was not discussed so fully as it ought to have been.

An important question was asked by Mr. Fairbairn—What is the commercial value of those machines, when the steam-engine can be applied for the same purpose? Now, it appears to us that by the application of the steam-engine for the purpose of accumulating the force to work this hydraulic engine this question is not only answered in favour of the hydraulic engine, but it is shown that the steam-engine is to be degraded by being a sort of bottle-holder for the hydraulic. This certainly appears to be a position unmerited by our old servant the steam-engine. We would, therefore, return to Mr. Fairbairn's important question, and in the reply to Mr. Armstrong we find the key to the whole question: he remarks—"That the usefulness of this principle of working depended in the great majority of cases upon the principle it involves of transmitting the power generated by a steam-engine, and rendering it applicable under circumstances in which it (the steam-engine) could not be used at all." This, then, is the difficulty; the water can be conveyed to great distance under pressure, and it is not practicable at present to convey the steam from boilers the same distance. But this evidently involves a great additional expense—that is, the employment of both steam and hydraulic engines. It, therefore, becomes a very important question as to whether the difficulties met with in conveying steam in pipes a considerable distance cannot be overcome. We certainly think it quite possible that this may be done. It has been the practice at the collieries in the North for some time to convey it very considerable distances—that is, from boilers on the surface down the shaft, and certain distances along the galleries of the mines, for the purpose of working hauling engines placed there; and the loss from evaporation in such cases is not very large. We think there are instances where steam is conveyed from 300 to 400 yards in this way. We have lately applied an engine in this way, and the pressure on the valve in a receiver near the engine is found to be nearly the same as that on the valve on the boiler at the surface. And Mr. N. Wood made a statement yesterday in his address to the Institution which has an important bearing on this subject. He said he had recently tried experiments in order to ascertain the loss of pressure and volume in conveying steam under the circumstances we have noticed; but found that instead of diminished volume there was actually an increase of it—that is, he found in working a steam-engine a certain distance from the boiler down a shaft underground a greater quantity of steam was got from a given quantity of water than was got by working a similar engine near the boiler on the surface. This is certainly a remarkable result, bearing on the subject in hand, and we think the whole subject is well deserving the most careful consideration. The reason given by Mr. Wood for this was that the great length of pipe acted as a receiver, and prevented the passing of water from the boiler with the steam which occurs when the engine is placed near the boiler. Mr. Armstrong, in his paper, says:—

"The water-pressure engines erected by the writer at Mr. Beaumont's lead mines, at Allenheads, in Northumberland, present examples of such engines applied to natural falls. They were introduced under the advice of Mr. Sopwith, and are now used for the various purposes of crushing ores, raising materials from the mines, pumping water, giving motion to machinery for washing and separating ore, and for driving a saw-mill and the machinery of a workshop. In all these cases nature, assisted by art, has provided the power. Small streams of water, which flowed down the steep slopes of the adjoining hills, have been collected into reservoirs at elevations of about 200 ft., and from these pipes have been laid to the sites occupied by the engines. Another application of hydraulic machinery, in connection with Mr. Beaumont's mines, is now being made in situations where falls of sufficient altitude for working such engines cannot be obtained, and this, from its novelty, deserves a special notice in this paper. For the purpose of draining an extensive mining district, and searching for new veins, a drift or level, nearly six miles in length is now being executed. The drift runs beneath the valley of the Allen, nearly in the line of that river, and upon its course three mining establishments are being formed. At each of these power is required for the various purposes that have been enumerated, and the problem arose how to obtain it without resorting to steam-engines. The River Allen was the only resource, but its descent was not sufficiently rapid to permit of its being advantageously applied to water-pressure engines. On the other hand, it abounded in falls suitable for overshot wheels, but these could not be applied at the points where the power was wanted. Under these circumstances it was determined to make the stream operate through the medium of overshot wheels, in forcing water in accumulators, and thus generating a power capable of being transmitted by pipes to the numerous points where its agency was required. In this arrangement intensity of pressure takes the place of magnitude of volume, and the power originating from the stream assumes a form susceptible of unlimited distribution and division, and capable of being utilised by small and compact machines. Something of the same kind is also being applied at Portland Harbour, in connection with the coaling establishment there forming for the use of the Royal Navy. The object in that case is to provide power for

working hydraulic cranes and hauling machines, and more particularly for giving motion to machinery arranged by Mr. Cooke, the present engineer of the works, for putting coal into war steamers. A reservoir on the adjoining height affords an available head of upwards of 300 ft., but in order to diminish the size of the pipes, cylinders, and valves connected with the hydraulic machinery, and also with a view of obtaining greater rapidity of action, it has been deemed advisable to interpose an hydraulic pumping engine and accumulator, for the purpose of intensifying the pressure and diminishing the volume of water acting as the medium of transmission."

Several other important papers were read—one by Mr. Spencer, of the Newburn Steel-works, on the "Manufacture of Steel by the Uchatz Process." It appears that by this process very fine steel can be produced at little more than half the cost of the common method. The manufacture of steel at a reduced cost is a very important subject, and its application for the purpose of making wire-ropes, and various other things where great strength and lightness is required, has been much discussed of late. Mr. Fairbairn said they were in a transition state as regards the principle of manufacturing steel, and they might look forward to very great improvements not only in the manufacture of steel, but also of iron.

The members visited, on Tuesday, the engineering works of Mr. Armstrong, at Elswick, where that gentleman explained the mode of manufacturing the wrought-iron guns, and also the hydraulic machinery. The Low Elswick Works were then visited, where the experiments were made recently for the prevention of smoke, in reference to the premium of 500*l.* lately awarded to Mr. C. Wye Williams; and here Dr. Richardson explained the mode in which those operations were conducted. The results certainly appeared to be highly satisfactory, as after several trials were made very little smoke issued from the funnel, and that of a pale colour, not at all of an offensive character. We shall refer to the remaining papers, which are important (particularly that of Mr. N. Wood, on the "Improvements effected in the Working of Coal Mines during the last Fifty Years"), in our communication next week. The plans and models exhibited at the rooms of the Natural History Society, in connection with the Institute, were many of them of a highly useful and interesting character. The most important are—1. Specimens of safety-lamps.—2. Model of a coal pit, showing the mode of applying two round wire-ropes to each cage in the place of flat ropes in deep pits, by Mr. Hedley, colliery engineer, South Hetton Colliery, Durham.—3. Model of new coal staiths at Jarrow Docks.—4. Model of self-acting apparatus for sending coals from the pit, and, at the same time, crushing them for coking purposes.

The strike at the Heworth Colliery still continues; a portion of the workmen were ejected from their houses yesterday, as they refused to work, and also refused to vacate their houses, which is certainly unreasonable conduct on their part. A certain number of the men previously employed at day-work commenced to get coals on Monday last, and some men from other places have been got during the week in addition to those. But we are sorry to see that a small section of the men who remain idle about the works are trying the old system of intimidation, &c., which is much to be deplored. However, we are still of opinion that the strike cannot be of long duration.

THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

(FROM OUR CORRESPONDENT IN WEST CORNWALL.)

Aug. 26.—At the sale of copper ores last week there was an advance of 22*s.* in the standard, and a further advance is expected at the sale which will take place to-day. The proceedings of the smelters, however, are somewhat uncertain, and their intentions may be altered since last week. The Alkali and Metal Company, Lancashire, purchased last week 103 tons of low produce; but it is likely their purchases will increase as soon as they are sufficiently provided with samples. It is expected there will be more purchases, as soon as trade improves. Unfortunately, at the present time the trade reports are of a very dull character. A little revival takes place one week, to be followed by slackness in the next. The copper trade is by no means in a satisfactory position, but it is confidently expected that we shall have a better state of things in the fall of the year.

From the commencement of the quarter to the sale on August 19, the copper standard has risen, at the several weekly sales, 6*l.* 6*s.*, and has fallen 4*l.* 7*s.* There is thus an improvement taking place, although not to any very great extent. Before the end of the quarter the advance, there is no doubt, will be increased.

In consequence of the low standard for copper and tin, and the depression of trade for some time past, shares in mines generally have sunk in price, and afford a good opportunity at the present time, in some of the most promising mines, for capitalists to purchase. A general advance in the value of mining property may be expected before the close of the year. The commercial transactions of the nation are now of so comparatively contracted and cautious a character, that there can be no chance of another monetary panic; and it is equally certain that a gradual revival of trade must take place, causing a greater demand for metals, and an increasing standard and larger profits for mines. This, then, would seem to be the time for capitalists to invest in mining property, when they may do so at low prices, and can scarcely fail, with judicious investments, of making large profits in the course of the next six months; due care, however, should be taken before such investments are made to obtain the advice of agents of character and ability.

There is a somewhat better feeling in the mining market, which a few good improvements would soon stimulate into activity. There have been some strong reports about the improvement in the United Mines, and consequently shares considerably advanced. The Hot Lode, which made such extraordinary quantities of ore in the 208 and above, is now come into rich ore ground in the 220, the end being worth from 70*l.* to 80*l.* per fm. There is a considerable extent of undeveloped ground in the United Mines, but it should be remembered that the expenses are very heavy, and, therefore, intending purchasers should have good advice before they venture their money. Wheal Buller is looking somewhat better, and shares have advanced. The adjoining mine, Copper Hill, is also looking well near the boundary shaft, where, indeed, the hopes of the adventurers are now concentrated, as the other parts of the mine have failed; after great expense in the operations. Grambler and St. Aubyn is an improving mine; a considerable quantity of the ore raised is above 20 per cent. produce, and besides the engine lode, the north lode is looking well, although only opening at a shallow level; the 12 east is stated to be worth from 30*l.* to 40*l.* per fm. West Seton shares are firmly held, but are not likely to advance much for the present, on account of the outlay for another engine; this expense, however, is not much for such a productive mine as West Seton, although it may for the time prevent the dividends from increasing. Some time ago a productive lode was intersected in the 80 cross-cut at North Roskear, and the agents of West Seton state that if its present direction continues westward the same lode will pass through the whole length of the sett of West Seton. They are of opinion that if their 56 cross-cut from the engine-shaft be driven south about 50 fms. further it will intersect the North Roskear lode about 100 fms. from the eastern boundary, and thus it may open up a very important addition to the resources of this valuable mine; for the present, however, the cross-cut will not be continued. South Seton is stated to be looking promising in the shaft, but being a young concern is wanting in depth; in the Seton district the deposits of ore are generally formed at deep levels. West Basset continues to look well, and is opening up some good productive ground on the north lode. Camborne Vein is another mine that is attracting attention; there is a rich lode in the 170 fathom level, and the price of shares has advanced. In former times this was a very productive mine, and the ores were of a good quality; from 1815 to 1856 the mine sold 29,332 tons of copper ore, which realised the sum of 176,235*l.* North Frances is stated to be looking somewhat better at the shaft. At South Carn Brea the lode at the shaft is worth 14*l.* per fathom, and looking well for improvement in depth. Great South Tolgus is continuing to open profitable ore ground, and is looking well at several points. Wheal Margery has a good lode at Wellesley's shaft, worth 25*l.* per fm., but the ends are of less produce. East Carn Brea is looking well at the shaft. West Rosewarne has a promising lode in the 50 east and west, but greater depth seems to be required. East Alfred is looking rather poor.

A sad accident occurred at Porkellis United Mines on Tuesday. A solar in an old shaft gave way, and the slimes from the tin dressing-floors, of which there was a great quantity at surface, poured into the shaft to such an extent as to fill 40 fathoms of the levels, shafts, and workings of the mine. The miners decamped for their lives, and got up the shafts as fast as possible, but seven unfortunate men were overtaken by the rising stuff, consisting of slime, decomposed granite, water, and their lives were lost. According to the present appearance of things the mine is destroyed.

There have been reports that the Mining School was to be resuscitated, and that some of the landowners were ready to subscribe for that purpose; but I hear of no active steps for the re-establishment of the institution in

any way. It seems a discredit to the county that such a school should fail for want of support, or of the appreciation of the mining part of the community. Surely such an institution ought to flourish and be useful in Cornwall, in the midst of the practical working of mines, more than in any other part of the world.

The Cornish farmers are very busily occupied in harvesting, for which they have very fine weather. The wheat has been to a great extent saved, and the barley harvest is progressing.

The shipping interest is about to receive benefit by the improvement of Falmouth Harbour. Mr. James Abernethy, the well-known engineer, has just completed a survey of the harbour, with a view to the construction of docks, &c., suitable for the requirements of the port.

The Cornish pilchard fishery has commenced, and some fish have been taken in the drift boats. Shoals have been seen off the coast, but in deep water, and too far out for the seines.

THE IRON AND METAL TRADES OF STAFFORDSHIRE.

[FROM OUR CORRESPONDENT AT WOLVERHAMPTON.]

Aug. 26.—The Iron Trade does not exhibit any great change, but there are indications of improvement. In regard to the general trade of the district the impression is on all hands that there is a decided change for the better; there is more employment, advices are now encouraging, and the expectation seems to be generally prevalent that there will be a fair trade for the approaching winter, but this statement must not be interpreted to mean that manufacturers are as yet by any means fully employed.

The colliers continue on strike, and the movement appears rather to have taken larger dimensions during the week. Great efforts are being employed to induce the mine colliers and those west of Dudley, who long ago acceded to the reduction, to demand the restoration of the amount then deducted from their wages. So far no decided instance of this purpose having been effected has been made known. The colliers are meeting in detached bodies at a very early hour in the morning, the object being to deter men from going into the pits to work. There were five such meetings this morning in different parts of the district, the largest, at Tipton, being attended by nearly 1000 persons. It is, however, stated that many of these were not colliers, but men who work at the iron-works, and who would, at the hour the meeting was held, be going to work. The police are present near all these meetings, and have to traverse the district constantly to keep those on strike from intimidating those who are at work.

A placard was issued last week stating that the men at some thin coal collieries would cease working on Monday, unless their wages were raised to the amount at which they stood before the drop, a proceeding which would be clearly illegal, as a fortnight's notice is necessary. This placard has, however, been disclaimed by the men, either because they discovered their mistake, or it was issued by some one without any authority. A large meeting was held at Netherton, at five o'clock on Monday morning, the object evidently being to induce the colliers west of Dudley to join in the strike. These men have long been working at 4s. a-day. Some 500 came in a body from the eastern district, and the whole meeting amounted to between 2000 and 3000, being the largest ever held since the strike commenced.

Resolutions were proposed and carried that the colliers west of Dudley would not work for less than 5s. per day, and that those east of Dudley would not go in unless this advance was granted to the men west of Dudley, even if they were offered the same wages. It was suggested at this meeting that, if the masters would limit the day's work, the men would accept the lower rate of wages, but this was not favourably received, and a speaker, who said that by union they would be able to get both the higher rate of wages and the reduction of the day's work, was rapturously applauded. This, taken in conjunction with the resolution to work only four days per week, illustrates the wildness of the colliers' demands, made, too, at a time when bankrupt iron and coal masters abound—when trade is suffering from one of the most serious and protracted depressions ever known, and when South Staffordshire is called upon to compete with numerous districts in which iron-works are being erected, and in which iron can be made very cheaply. How long the strike may last it is difficult to say, for no men are more fickle and uncertain than colliers; but the masters appear determined to insist upon the reduction. Some of the leading men in the strike on Friday took the opportunity of Mr. Philip Williams, Chairman of the Ironmasters' Association, and High Sheriff of the county, being at the opening of the Netherton Tunnel, to ask him to endeavour to arrange for a meeting of masters and men with respect to the strike, but he courteously, though firmly, declined to interfere. The distress which the strike occasions, coming as it does in a period of extreme depression from other causes, is very great. A placard has been put out contradicting the statement of the colliers that coal and ironstone are not reduced in price. It states that in all descriptions of coal a reduction has taken place, in some kinds to the extent of 4s. per ton, whilst in ironstone the reduction is 7s. per ton, and the tendency, with respect to both minerals, is to a further reduction. The writer observes that all parties, except the thick coal colliers in the eastern district, have had to submit to a reduction, both masters in the prices they receive, and their workmen. This is a patent to everyone, and the fact of these men not having been previously reduced has always been regarded as an anomaly, only to be explained by the large demand for domestic coal for Birmingham, in the supply of which this part of the district has almost had a monopoly, which will, to a considerable extent, be done away with by the opening of the magnificent tunnel at Netherton.

To the particulars given last week of this great work, it is only necessary to add that the opening was attended by a most influential company. Sir George Nicholls, Chairman of the Birmingham Canal Company, the Marquis of Chandos, Chairman of the London and North Western Company, Philip Williams, Esq., Chairman of the Ironmasters' Association, and a host of influential men graced the proceedings with their presence. All concurred in expressing their admiration of the excellent style in which the works are executed. Mr. P. Williams stated at the dinner, as illustrating the public spirit of the Birmingham Canal Company, and the progress of the district, that the Birmingham Canal was made nearly 100 years ago, by Simon Simcox, and it used to be said that in constructing the canal he kept on repeating his initials—S for Simon and S for Simcox—all the way along the line. On many a wintry night he had been kept upon one of those S's two or three hours. Within the last 25 years the Birmingham Canal Company had shortened the distance between Birmingham and Wolverhampton seven miles; and had laid out in doing so 800,000l.; but instead of taking an increased toll to compensate them for that outlay, they took a diminished toll on the decreased distance. Then they made the Walcot Tunnel, the Tame Valley Canal, and that magnificent canal along which many of the company had that morning come from Birmingham. Then there were the Walsall Locks and other works, which cost the company 600,000l. more, and they had now spent an additional 300,000l. on the works opened to-day. Their entire outlay had been little short of 2,000,000l.; but their policy had ever been to keep down freights in order to encourage the trade of the district, and the wisdom of that policy was manifested in the results, their original capital having been increased thirty-two fold.

The half-yearly meeting of the shareholders of the South Staffordshire Water-works Company was held at Walsall, on Tuesday last. This company was established for the purpose of conveying the water of an affluent of the Trent at Lichfield to many of the towns of South Staffordshire. In order to provide an increased supply, a tunnel has been cut in the red sandstone at Lichfield, and so far the result appears likely to equal, or exceed, the expectations of the engineer, Mr. McClean. The rock which has been tunnelled through has been found exceedingly hard, and the water pours in so profusely that the contract has been considerably delayed. A reservoir at Lichfield, capable of holding 90,000,000 gallons, is almost completed. From this the water will be pumped to a reservoir occupying an elevated position above Walsall, capable of holding 60,000,000 gallons, also nearly finished; and there will be one of less dimensions near Wednesbury, at a still greater elevation. Great difficulty has been experienced in disposing of the shares of the company, and it was only by a special effort that half the capital was raised, so as to enable the company to take advantage of the borrowing powers conferred by the Act, and which it is necessary to resort to in order to complete the undertaking, which has been greatly retarded for want of means. It is now confidently anticipated that the works will be so far completed in two months as to fill the reservoirs, and no greater blessing can be conferred upon the populous district which it is proposed to supply than will be afforded by this company.

The half-yearly meeting of the South Staffordshire Railway, which runs between a point betwixt Lichfield and Burton, where it joins the Midland Railway at Dudley, was held to-day, at Birmingham. Mr. R. C. Chawner, the Chairman, who is also Chairman of the company before alluded to, presiding. As the line is leased originally to Mr. McClean, and on the

termination of his lease to the London and North-Western Company, the meetings possess little interest. Under that lease the interest payable for the last seven years has been 4 per cent., and for the next thirteen years it will be 4½ per cent., the London and North-Western Company agreeing to pay 4 per cent. thereafter. The lessee naturally does not make any statement of the traffic on the line, so that the proceedings are almost entirely of a formal character. The report stated that the contracts for branches at Tipton and Darlaston had been let to Mr. Brassey.

The winter session of the Wolverhampton School of Art was inaugurated this evening by addresses from the new master, Mr. Muckley, formerly of Burslem, and Mr. Wallis, formerly Master of the Birmingham School of Art, and who is a native of Wolverhampton. There was a good attendance of students and subscribers. The addresses were excellent, their main point being to inculcate the necessity of patient study and thorough mastery of the elementary stages of study. The institution is making tolerable progress, but has not as yet secured so large a number of students from the artisan class as could be desired.

The particulars of the terrible railway accident, which happened on the evening of Monday last, at Brettle-lane, near Dudley, have been made known widely through the daily papers. So far as the investigation into its cause has gone, it appears to indicate great neglect on the part of the railway officials. It is proved that in going the train twice divided on this very incline, which, however, it was then ascending instead of descending; that the jirks were so violent that a clergyman in the train enquired whether the drivers were playing tricks; and it is a fact that two persons from Wolverhampton were so much alarmed that they got out at Kidderminster, and returned to Wolverhampton instead of proceeding by the train. It is plain, therefore, that there was sufficient warning in the morning that the fastenings were insecure, which ought to have led to means being taken to avoid an accident. It further appears that the guard in the morning got a number of persons in his van, contrary to rule; that he borrowed a light, and smoked a good part of the way, and that he got passengers to put on the break for him. The whole exhibits remarkable carelessness in the management of the train. The question of the danger of steep inclines is also raised by this accident, but further enquiry will, doubtless, throw light upon this and other points connected with this distressing occurrence.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

[FROM OUR CORRESPONDENT IN CHESTERFIELD.]

Aug. 26.—The unusually quiet aspect of the trade is the subject of general conversation among ironmasters, who are unable to prognosticate the period when an alteration for the better may be expected; and the large contracts for rails recently given out have had the effect of imparting a degree of activity to those houses in which the manufacture of rails is extensively carried on; but the impetus to the trade in general has been exceedingly slight. The continental orders are only small, whilst the demand for home consumption is restricted to immediate requirements. The Scotch pig-iron trade is quiet, and prices are a shade lower. The demand from the manufacturing districts is improving, and there are abundant stocks on the bank to meet the requirements of trade for some time yet to come.

The unfortunate strike at the Oaks Colliery, near Barnsley, has assumed a new form. The men who have been ejected from the houses which they occupied under the masters have taken up their abodes in tents, which have been borrowed, and erected in a field in the neighbourhood rented for that purpose. They continue to receive some little support from the Colliers' Union, but the rate of allowance is miserably small; and if the suffering and privation of themselves and their families be taken into account, they must be keenly sensible of the injury which they are entailing upon themselves and those around them. This week the Barnsley magistrates have had to adjudicate upon matters relating to the strike, and the whole district seems to be in a state of fever and ferment. The more sensible portion of the men have returned to work, and the rest are being led by the nose by a section of stump-orators, who find it more easy to "spout" above ground than to go to work underground. It is to be regretted that the contagion, which a section of discontented men have created, is spreading in other districts, and so long as the thing is fostered and nursed by the Colliers' Union, it is impossible to say how long this state of disquietude may exist, or what mischief it may produce. In Lancashire there are a number of men out on strike, but Derbyshire is almost entirely free from such a dire evil, which may, in a great measure, be attributable to the abundance of employment which the rapid development of the minerals of the county is affording. The rate of wages is higher, and men find no difficulty in getting employment. It must be admitted that if the masters are to have control over the men a different system of hiring must be adopted. That carried out in the north country must be tried—a contract for six or twelve months.

A general meeting of the Mill Dam Mining Company was held at Sheffield, on Tuesday, Mr. Howe Ashton, of Castleton, occupying the chair. The agent, Mr. Norton, presented a very favourable report of the prospects of the mine. The new shaft had been sunk 30 yards, and in going down the ground had presented favourable indications of being remunerative. A new board of directors was appointed, and the financial position of the company was gone into. It would appear that, after paying for the property and liquidating the expenses already incurred in the sinking of the new shaft, the company had upwards of 6000l. to receive from the uncollected capital.

The Eyan Mining Company, on Thursday, sold 62 tons of lead ore, and at the previous sale, 81 tons; making 143 tons raised during the last seven weeks. The committee declared a dividend of 20 per cent. on the share.

The directors of the Mill Town Mine, at Ashover, met to-day to measure and sell the ore. It was expected there would be 100 loads for disposal.

The men from Messrs. Lees and Booth's collieries, in the Manchester district, to the number of about 1700, are still on strike, and are appealing to the miners and the public for assistance.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

[FROM OUR CORRESPONDENT IN SOUTH WALES.]

Aug. 26.—We cannot report any material change in the state of trade here since last week. The remarks then made apply now with equal force, and no event of interest has occurred in connection with any of the works. One evil which has aggravated the inconveniences arising from dull business has been removed—we refer to the scarcity of water. During the last few weeks three or four pits in Aberlure, and the forges at Dowlais and other works, were stopped for want of water, but the rains this and last week have done much good, and so far an improvement has been experienced. The iron trade continues depressed, and no fresh orders of importance have arrived. The market for coal is in no more satisfactory state, and one or two large contracts just taken up, or still on offer, give confidence to sellers. Freights at the ports are on a slightly reduced scale.

We incidentally alluded last week to the Taff Vale Railway Company, intimating that it must have suffered severely from the effects of the strike among the colliers. Such proves to be the case. At the half-yearly meeting, held in Bristol, the Chairman stated that "the effects of the strike had been most disastrous, not only with regard to the permanent loss inflicted, but from having diverted the trade of the district into other channels, which it would take a considerable time and cost to restore." The directors are, as far as practicable, and they had effected a saving of 60000l. in the charges for the permanent way during the past half-year. By this saving, and by taking 40000l. from the balance from the last half-year, they were enabled to recommend a dividend of the rate of 7½ per cent. per annum. The proprietors would observe that the earnings were 20,000l. less than during the previous year. This loss had been principally occasioned by the strike, and by the reduced tariff of the company. As to the future, he could only hope that by strict economy, and an increase of trade, they might look forward to being able to maintain their present dividend. Under the circumstances, the shareholders may congratulate themselves on being in a more satisfactory condition than many anticipated. A dividend of 7½ per cent. when the earnings amounted to 20,000l. less than during the previous year, proves that the company's affairs must have been in a perfectly prosperous state previous to the late falling off in trade.

The South Wales Mineral Railway, intended to connect Glynorway and Britton Ferry Docks, is being proceeded with rapidly by the contractors, Messrs. Toole and Morris. One-third of the line is nearly completed, and a tunnel has been excavated to the extent of nearly 300 yards. The railway will be of great service, and we trust that by the time it is completed business will have so far resumed its old activity as to ensure the success of the project.

Some further particulars have come to our knowledge respecting a singular accident which happened recently in a colliery belonging to Mr. Nixon, at Mountain Ash, near Aberlure. A shaft was being sunk for a new pit, the operations being carried on by means of wooden staves, which are lowered or raised according to the progress of the work. While a number of carpenters and miners were upon one of these it suddenly gave way, and fell to the bottom of the shaft, a considerable depth. Some of the men contrived to catch hold of the sides, but among those who fell to the bottom two were drowned in the water (which was rather deep), and several others were more or less injured. The cause of the accident is unknown, but it is one of the most extraordinary of the many which have been held at Llynwendy, Carmarthenshire, on the body of a collier, named Samuel Williams, whose death was caused by the fall of a large stone from the roof of a level. The evidence showed that the catastrophe was purely accidental, and a verdict in accordance with this fact was returned.

A similar enquiry has taken place this week at Tredegar, before Mr. Brewer, on the body of Jeremiah Brown, a collier, who was killed in the Drift Coal Pit by a fall of coal and rubbish. As in the former case, no blame was attached to any party, and an ordinary verdict was returned.

An enquiry of a more prolonged and serious nature has been concluded at Talyfer, near Swansea. It will be remembered that about a fortnight ago an explosion took place in the Cyffing Pit, by which six men were almost immediately killed, and several others severely injured. Rumours of the dangerous state of the colliery, which belongs to Mr. Walters, began to circulate, and a very strict investigation was, therefore, instituted. The coroner, Mr. C. Collins, presided; and Mr. Evans, Government Inspector for Glamorganshire, with Mr. Lionel Brough, the successor of Mr. Herbert Mackworth, were also present. A number of witnesses were examined, and as the facts elicited are of importance, we shall give an abstract of the testimony adduced.

On the morning the explosion took place 12 men descended to work, 14 being the number usually employed. The men whose duty it was to examine the colliery every day had only partially discharged his duty on this particular occasion, and similar neglect had, doubtless, been shown before. The colliers all used naked lights, and not safety-lamps, this being the case in several other pits in the Swansea Valley. In the early part of the day the men met together about 20 yards from the bottom of the pit "to have a chat." After smoking for half an hour one of them was about returning to his work

with a naked light in his hand, when the explosion took place, with the consequences already described. The witness who stated these facts was the man who rose first, and in answer to Mr. Evans, he stated that he had never even seen a copy of the rules, and that Rees Thomas, the manager, had not been seen in the pit for four days previous to the explosion. Rees Thomas himself was examined at some length, and in the course of his evidence gave the following explanation of the mode in which the mine is ventilated:—The air passes down the pit along the west end, rising along the heading pointing to the north; it comes back through an upper level to the east down the slope, and down through shafts to the lower level, and then to the up-cast pit. The pit is divided by a brick "brattice," 4½ in. thick. The up-cast pit is 2½ ft. wide by 10½ ft. There is only one door on the first stall, on the western side of the pit. Part of the air goes up the works, and when necessary we place a door to send it further on. We allow the air to be distributed through the whole five shafts, so as to send the air through the old workings. The air passes on to the face of the level, without a door on the second stall, which is a distance of 132 feet. The air does go there. The use of the door on the first stall is to prevent the air returning up the heading. If we saw the air doing that we have been accustomed to put a door on the second stall. There was not much gas (fire-damp) given off from the coal. From the face of the level back to the last "holme," where the air can go up to the rise, is about 30 yards—it may be more. The air goes by its own impetus to the face of the level; it does pass, and there is no fire there. I have not been told of any gas in the face of the level, nor in the shafts to the rise. There is a sufficiency of air in the face of the level to allow men to work there without danger. There may be a yard or two in these cross headings. There is nobody working there now. It certainly is not safe, of course, but nobody is allowed to go near it. There are danger signals there—cross timbers put from one pillar to another. (Witness was here cautioned by Mr. Evans.) I cannot say there was any danger signal there before the explosion took place. There are small "blowers" given off occasionally in the top of the coal. The door on the eastern part of the pit is only open when wagons or the colliers pass. If the door were left open the works would fill with fire. If we put another pair of doors between that door and the first I cannot say what would be the result. The present doors are air-tight. The doors do not shut of their own accord, but we keep door-boys. The boy was answerable for that door and the door at the bottom of the slope. The door at half-way up the slope was not there at the time of the explosion. The air would go the same way but for that door. If the door on the first cross heading were taken away I cannot say what would happen. There is plenty of air in the face of the level. We have had no difficulty there with the air. The witness further stated, on cross-examination by Mr. Symonds, that there is a furnace in the air-way on the top of the pit, the heat from which acts on the air-way, and causes a draught. It serves as a column of air 35 feet in length. He further admitted, as manager to the colliery, it was his duty to give a copy of the rules to each man, but he had not done so, because he "thought the place was so free from danger that it was unnecessary."

Robert Fisher, colliery-clever, gave the following facts in connection with the accident:—"I never was in the colliery before the explosion took place; went down the morning of the explosion. I went to the east side of the pit, as far as where the door had been placed. I inquired of Rees Thomas where the explosion had taken place. He told me just at the bottom of the slope. I found that the after-damp was too strong there to go any further with safety. I went to the west side of the pit, and found two trams; one had been doubled up by the explosion, and the other had fallen on its side. We found the arm of one boy by the side of one of these trams. The trams were about five yards from the bottom of the pit. I went to the face of the west level, and tried to go to the east side again, but failed. The double door on the east level had been blown upwards to the west level. I managed a colliery up the valley—all are worked by naked lights—they are not the same description of coal. Cannot say the quantity of gas thrown off in this colliery. I found air as far as the last stall on the west side; this was on the Wednesday after the accident. There was none beyond this. Even if the gas were given off at the extreme end of the west level, it would come down to where the men were sitting."

Mr. Evans gave important evidence, and his statements are such as to severely condemn the ventilation and general management of the pit. He said:—"All the gas given off in the western side of the pit by the present system of ventilation must be brought to the same point. The ventilation is conducted at the back of a brattice pit, the top of which is a small furnace. This furnace, in my opinion, is of little or no use, as the air used for the consumption of the coal is not that which comes from the colliery. The furnace, to be effective, must be of sufficient power always to make the same shaft up the up-cast. There are no means on the western part of the pit to ventilate the colliery except the motion which the men give to it, and the heat which they impart. The day was extremely hot when the accident took place, and would interfere with the ventilation of this colliery. I have been in the adjoining collieries, and know the quantity of gas given off. I have seen from my observations to-day that the same was when the accident occurred. The amount of air I found to-day was so small as not to move the natural currents of the air. I managed a colliery up the valley—all are worked by naked lights. The safe way to work this colliery is to sink a new pit, and place a furnace at the bottom, and the places must be regularly examined in the morning before the men go down. The ventilation of the colliery at this moment is not safe. From the evidence given this day, I should say, as a scientific man, that the ventilation of the colliery on the morning in question was not adequate, but the immediate cause of the accident, doubtless, was the man not examining it in the morning. I examined the place this morning, and believe the general system of ventilation the same as when the accident occurred. The amount of air I found to-day was so small as not to move the natural currents of the air. 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the aid of an eccentric, or by a cross slide attached to the air-pump rod, or by a link and lever attached to the air-pump rod, and where a circular motion is required it may be obtained from any convenient part of the engine. The other disc has a variable oscillating motion given to it by means of the combined action of the governor, and an eccentric fixed upon the crank shaft.

HYDRO-CARBONS.—Mr. Francis Puls, Haverstock-hill, proposes to distil gas pitch (the residue of the distillation of gas tar, dead oil, &c.) in combination with earth, alkaline, or metallic oxides, sub-oxides, or carbonates, by which means a mixture of fluid and solid hydro-carbons is obtained, which may be separated, and subsequently purified for use, the gaseous products evolved during the process being also collected, and employed in any suitable manner.

ELECTRO-MAGNETIC ENGINE.—Mr. F. Yeiser, Louisville, Ky., has invented a new engine, in which electro-magnetism is to be the motive power. The invention consists in a certain system of balanced beams or frames carrying soft iron bars at each end, to be operated upon alternately by two series of electro-magnets in such a manner as to receive an oscillating motion, and having combined with them mechanism through which their oscillating motion is caused to produce the rotary motion of a shaft. —*Scientific American.*

THE HYDROSCOPE.—We understand that Mr. Gautherot, whose abilities as hydraulic engineer we have already referred to, has had an interview with H.R.H. the Duke of Cambridge, and with the Secretary at War, relative to the supplying of the Camp at Aldershot with water.

BOILER EXPLOSIONS.—At the inquest on George Stevenson, who lost his life by the explosion of a steam thrashing machine at Daybrook, near Nottingham, it was stated that the explosion resulted from the engineman, Henry Sulley, leaving the machine without closing the damper or easing the safety valve, thus causing the steam to generate rapidly, and to burst the boiler. Large pieces of metal from the machine were hurled about 5000 yds. in all directions.

proven to a distance of 200 yds., and a by-wheel is picked up 100 yds. from the engine. The inventor, Mr. D. H. Dunston, has invented an apparatus which is designed to prove useful in preventing such accidents as are caused by the water, either through neglect or otherwise, getting below the level of the boiler. It consists of a float, made so as to rise and fall with the water in the boiler with certainty, and is connected with a valve (by means of a lever), which is fixed on the top of the boiler. When the water falls below the level (or limited line), the float, with its fall, opens the valve, from which the escaping steam conducts the water of a pipe down to the ground, and in case of fire, which in case of course, speedily damped, and the internal pressure steam in the boiler is also greatly diminished.

RECKLESS DISREGARD OF LIFE BY A COLLIER.—At Wakefield, John Lister, a coal miner, was summoned for violating the colliery rules of the Haigh Colliery, Rothwell, of Mr. Charlesworth, M.P. He had repeatedly neglected to obey directions as to putting props to support the roof; and though there was a possibility of 4 tons of shale falling from the roof in consequence of his neglect, he still refused to obey the underviewer's orders to put more props. He was fined £1., and told if again brought before the Bench on a similar charge he would be sent to prison.

BREACHES OF THE COLLIERY ACT at BRADFORD.—At the West Riding Court, Bradford, Mr. Edward Ackroyd, colliery owner, at Gildersome, was charged on three informations preferred by Mr. C. Morton, the Government Inspector, with various breaches of the Act for the regulations of mines, in having published no special rules, in not having a copy of the regulations of the Act in the colliery, in not having a copy of the Act defined 5*l.* each, and expenses, and on the third 5*l.* and expenses.—Messrs. Baxanall Brothers, colliery owners, at Cutler Heights and Holme Bank, near Bradford, were also charged on ten informations, with similar offences at two pits. They were convicted on the first two informations, and fined 10*l.* each, and expenses, and on the rest, 1*l.* each; altogether, with expenses, 29*l.* 6*s.* 6*d.* —*Manchester Guardian*.

RAILWAY WORKS AND COLLIERY OPERATIONS IN AMERICA.—OPENING OF THE BLACK CREEK COAL BASIN.—COMPLETION OF THE COUNCIL RIDGE TUNNEL.—Mr. M. McMichael thus reports to Mr. A. S. Roberts, president of the Lehigh Luzerne Railway Company:—"The tunnel of the Lehigh Luzerne Railroad is now opened entire; through the mountain. The work has been prosecuted from both ends, and when the drillers were in close proximity a blast, prepared for the purpose, admitted daylight, and enabled the parties on either side to shake hands. This tunnel penetrates Council Ridge

the only barrier that interferes with the transportation of coal from the extensive and thrice-valleys of Big and Little Black Creeks, and Sandy Creek, in Luzerne county, and immediately north of the Beaver Meadow and Hazleton Coal Basins. The tunnel is 1,950 ft. long, and, at the foot of the mountain, and the approaches measure 1,998 ft. in all. The cutting, about one-third of which is rock, is 100 ft. deep, and is for a double track. Except about 80 ft. of the southern end, which requires arching, the rock is generally compact, and forms an excellent tunnel roof. The work has been driven on with energy by the last contractors, Messrs. McGinn, Reilly, and Co., under the superintendence of Mr. Reilly; and the engineer, Mr. Martin Corvill, had the grati-

ation of seeing to his centre lines met with exact precision. The coal is now carried from the Council Ridge Mines over the mountain summit by a temporary "switch back" road of steep gradients; but we expect to pass it over the new road and through the tunnel during the ensuing winter. It is also contemplated to start two more coaleries in Big Black Creek Basin the next season, which will secure an active trade on this road, and add materially to the business of the Hazleton and Beaver Meadow Railroads. All the connecting railroads and canals leading from the coal fields of the Lehigh to tidewater will, in like manner, participate in the benefit of these improvements.

On this report, the *United States Railroad and Mining Register* remarks:—"In a circulated dated Feb. 18, 1886, Mr. Roberts estimates that this road would earn 13% per cent. per annum on cost, over operating expenses, basing his calculation on a tonnage of 450,000 tons of coal, at an average toll of 84 cents per ton; the tonnage is to be furnished by the Big Black Creek Colliery, owned by the Big Black Creek Improvement Company, and the coal is to be carried on the lands of the Big Black Improvement Company, and the coal is to be carried by the Big Black Creek Improvement Company. Mr. Roberts is president of the United States Improvement Company, the Big Black Creek Improvement Company, and also, we believe, of the Big Black Creek Improvement Company. And jointly with Mr. J. Gilliland, he is president of the Big Black Creek Improvement Company."

and a very few others, Mr. Roberts doubtless holds a majority of the stock in each, derivable perhaps from lands conveyed to these corporations, payable in shares of stocks for purchase-money. And the fact that a part of these lands which cost the individual purchasers from \$3 to \$50 per acre, were invested in the stock of chartered companies at \$350, or seven shares at par, per acre, whereby in one case 1500 acres of land were exchanged for \$225,000 of capital stock, proves that, to some persons, the Black Rock Coal Basin has already been the scene of successful operations. It may be assumed, moreover, that when the three organized companies shall have sold the shares on hand, and

the state of the comarket shall be propitious, several additional joint-stock companies may be organised between the boundary lines of the existing companies, upon terms even more favourable to the present possessors of the fee simple in that locality; and, moreover, in the tables of the Lehigh coal trade in the next season the Black Creek Collieries will be represented; and if from the Black Creek Basin, over the Lehigh Luzerne Railroad road, there shall be a further extension, it has been predicted by Mr. Robert M. Smith, President of the Lehigh and Luzerne Railroad, that the coal fields of the Lehigh to tide-water participate in the benefit of these improvements, and most especially the Delaware Division, Canal, Company of Brunner, N.Y.

BORSIG'S MACHINE FACTORY.—The well-known machine manufacturer, Borsig, of Berlin, whose factory has just been visited by Her Majesty, completes his 1000th locomotive, the *Borussia*, which is to be employed on the Cologne-Minden Railway. On Aug. 21 a great festival of the workpeople was held in commemoration of the event, in accordance with the will of the present proprietor's late father.

THE EUROPEAN TESTIMONIAL TO PROFESSOR MORSE.—The representatives of the European powers which had decided on granting an indemnity to Professor

Morse for the use of his electrical apparatus, have come to a definite understanding. At the conference held in Paris on the subject, Austria was represented by Baron d'Ottensheim, Belgium by Baron Leysens, Holland by M. Lichtenvelt, Russia by M. Balabine, Sardinia by the Marquis de Villamarina, Rome by the Apostolic Nuncio, Sweden by Count Pie Tuscany by the Marquis Tanay de Nori, and Turkey by Haridar Effendi. M. Noel, ^{sub} director of the Ministry of Foreign Affairs, acted as secretary to the conference. The sum voted was 400,000 frs., of which France will pay 225,000 frs., Sardinia 15,000 frs., Rome 5000 frs. The money is to be paid in four instalments. The English ambas-

GRAND TRUNK RAILWAY OF CANADA.—The financial scheme of the directors of the Grand Trunk Railway of Canada was not at first understood. As so

As it was perceived that it was not a fresh creation of capital, but partly a conversion of stock into debentures and partly a distribution among the shareholders of the remaining debentures, several purchases of shares were made, expressly to enable the holders to avail of the option offered till the 31st; and both shares and bonds improved considerably. On examining the scheme of the proposed conversion, it will be seen that shareholders are invited to convert their stock, having a contingent 6 per cent. dividend, into 7 per cent. debentures, coming to the same thing as a 6 per cent. stock, and to purchase at 80 an equal amount of 7 per cent. debentures, redeemable at par, and to sell the remainder for cash. These terms are so favourable, that it was thought that a little more than 100,000 shares would be converted.

COTTON BRICKS.—The *Charlestown Courier* announces that a process has been discovered by which cotton can be compressed into a solid form, harder than wood, impervious to the elements, fire proof and water-proof, and capable of use for building purposes, at about one-third the cost of brick.

ROYAL SANTIAGO MINING COMPANY.—The directors hereby give notice to the shareholders that a CALL OF ONE POUND PER SHARE upon the 7000 shares of the company was made at the extraordinary meeting of the shareholders, held on the 1st ult., payable on or before the 23d Sept. next, to defray the cost of working the mine, and the cost of machinery, rendered necessary by the accident on the 9th May last.

A form to make the call will be delivered to the shareholders upon application at the office, and the certificate of the shares must be left at the same time, to have the re-

THE LONDON AND VIRGINIA GOLD AND COPPER MINING COMPANY.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the office of the company, No. 34, Lincolns-inn, in the City of London, on Wednesday, the 29th of September next, at One o'clock in the afternoon, for the purpose of confirming the following resolution, passed at an extraordinary general meeting of the company, held

the office of the company, on the 19th day of August inst., that is to say :—
That the London and Virginia Gold and Copper Mining Company be dissolved (except as for the purposes mentioned in the 79th clause of the ordinances, bye laws, and regulations of the company) from the date of the confirmation of this resolution, by an extraordinary general meeting of the company.”

And to transact such other business as may be brought before the meeting.

By order of the Board of Directors,
34, Lime-street, E.C. London, August 24, 1888.

JOHN ANDERSON, Sec.

UNITED STATES OF AMERICA—DUPEE, BECK, and SAYLES, BOSTON, MASSACHUSETTS, BROKERS for the PURCHASE and SALE OF SHARES, CITY, and RAILROAD SECURITIES, MANUFACTURING, and BANK STOCKS, give particular attention to the MINING COMPANIES OF LAKE SUPERIOR, and furnish reliable information concerning them.
[DUPEE, BECK, and SAYLES refer to the Editor of the *Mining Journal*.]

GOVERNMENT SCHOOL OF MINES, AND OF SCIENCE

APPLIED TO THE ARTS.
 DIRECTOR—Sir RODERICK IMPEY MURCHISON, D.C.L., M.A., F.R.S., &c.
 DURING the Session 1858-59, which will COMMENCE on the 4th October, the following COURSES OF LECTURES AND PRACTICAL DEMONSTRATIONS will be given:—
 1. CHEMISTRY..... By A. W. HOFMANN, LL.D., F.R.S., &c.
 2. METALLURGY..... By JOHN PERCY, M.D., F.R.S.
 3. NATURAL HISTORY..... By T. H. HUXLEY, F.R.S.
 4. MINERALOGY..... By W. H. STURTEVANT, M.A., F.R.S.
 5. MINING..... By A. C. RAMSAY, F.R.S.
 6. GEOLOGY..... By A. C. RAMSAY, F.R.S.
 7. APPLIED MECHANICS..... By ROBERT WILLIS, M.A., F.R.S.
 8. PHYSICS..... By G. G. STOKES, M.A., F.R.S.

INSTRUCTION IN MECHANICAL DRAWING, by Mr. BISSA.

The fee for Matriculated Students (exclusive of the laboratories) is £20, in one sum, on entrance, or two annual payments of £20.

Pupils are received in the Royal College of Chemistry (the laboratory of the school), under the direction of Dr. Hofmann, at a fee of £10 for the term of three months. The same fee is charged in the Metallurgical Laboratory, under the direction of Dr. Percy. Tickets to separate courses of lectures are issued at £1, £1 10s., and £2 each. Officers in the Queen's or the East India Company's service, Her Majesty's Consuls, acting mining agents and managers, may obtain tickets at reduced charges.

Certified school teachers, and others engaged in education, are also admitted to the lectures at reduced fees.

His Royal Highness the Prince of Wales has granted Two Exhibitions, and others have also been established.

For a prospectus and information, apply at the Museum of Practical Geology, Jernyn-street, London.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

THE TWENTY-SIXTH ANNUAL EXHIBITION of the above society will take place on Wednesday, Sept. 29th, and following days, when PRIZES will be AWARDED in the following departments:—MECHANICAL INVENTIONS, NAVAL ARCHITECTURE, FINE ARTS, NATURAL HISTORY, STATISTICS, PLAIN AND FANCY WORK, and SCHOOL PRODUCTIONS.

Objects intended for exhibition or competition must be sent, carriage paid, to the Polytechnic Hall, Falmouth, between the 20th and 25th of September, inclusive.

N.B.—By a recent arrangement of the committee, patented or registered articles are no longer excluded from prizes in medals.

For further particulars, application may be made to Mr. SYDNEY HODGES, Falmouth.

WATER SUPPLY.—IMPORTANT TO MINING

COMPANIES.—Well knowing the difficulty experienced by miners and others in England, Mr. GAUTHIER, hydroscopist, begs to OFFER HIS SERVICES in OBTAINING AN ABUNDANT SUPPLY. As a proof of the success which he has met with, he may refer to a notice relative thereto published in the *Mining Journal* of August 7, from which he makes the following extract:—

"The hydroscopist (Mr. Joseph Gauthier, a miner, of Nancy, France), who is the subject of the present notice, has succeeded in obtaining an abundance of water where others have supposed it did not exist, and wishes it to be distinctly understood that he does not employ charlatanry of any kind, but that his power is entirely derived from long experience. That he is competent to obtain water wherever it is obtainable is evident, since he has received testimonials from the mayors and officials of several communes of France, where his services have been availed of; and as there are many mines, especially in Wales, where water is much wanted, his ability might be tested with prospects of satisfactory results. He states that the process is simple and cheap, and that he can decide instantaneously whether or not water exists; so that it is to be hoped that he will be given an opportunity to prove the correctness of his assertions. It appears that his fame has extended to all parts of France, and that he has been patronised by the Emperor; and, in consequence of his invariable success, the greatest confidence is placed in his judgment. His advice has been sought by many of the largest communities, and the Government has awarded him a gold medal as an acknowledgement of the great advantages he has rendered to the public."

Mr. Gauthier has since had interviews with H.R.H. the Duke of Cambridge, and the Secretary at War, relative to the supply of water to the Camp at Aldershot.—Address, M. J. GAUTHIER, 34, Frith-street, W., London.

BRICKS.—Messrs. OATES AND INGRAM

inform brick makers on an extensive scale that their PATENT SOLID BRICK MACHINE is now THOROUGHLY AND EFFICIENTLY TESTED, and are prepared to OFFER the following counties to the trade, in districts, either by ROYALTY or PURCHASE:—Middlesex, Surrey, Sussex, Essex, Kent, Norfolk, Suffolk, Cambridge, Oxford, Gloucester, Hereford, Berks, Bucks, Huntingdon, Devon, Cornwall, Dorset, Wilts, Hants, and Isle of Wight.

With this PATENT MACHINE the ordinary surface clay requires no preparation whatever, whilst that of a rocky nature has merely to be passed through rollers in the usual way, and thence, WITHOUT ANY TEMPERING, INTO THE MACHINE, FROM WHICH THE BRICKS ARE REMOVED DIRECT TO THE KILN IN A STATE READY FOR BURNING.

The MACHINE is now making upwards of THIRTY BRICKS PER MINUTE at the works of Messrs. KIRK and PARRY, Government contractors, Fort Elson, near Gosport; and also at the Patent Solid Brick Works of T. WELLS INGRAM, Oldbury, near Birmingham.

Application for orders to see the machine in operation to be made to Messrs. OATES and INGRAM, Broad-street, Birmingham. Samples of clay may be sent and passed through the machine, and the bricks burnt, or a sample brick will be sent to any party wishing to see one.

Now ready, price 2s. 6d. each part.

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THE PROCEEDINGS of this INSTITUTE are PUBLISHED in QUARTERLY PARTS, which contain the Papers read before the Members, unabridged, and accompanied by the necessary explanatory plates, together with full abstracts of the discussion upon them.

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Mr. MURCHISON's new work on British Mines is attracting a great deal of attention, and is considered a very useful publication, and calculated to considerably improve the position of home mine investments.—*Mining Journal*.

The book will be found extremely valuable.—*Observer*.

A valuable little book.—*Globe*.

A valuable guide to investors.—*Herapath*.

Mr. Murchison takes sound views upon the important subject of his book, and has placed, for a small sum, within the reach of all persons contemplating making investments in mining shares that information which should prevent rash speculation and unproductive outlay of capital in mines.—*Morning Herald*.

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Parties requiring information on mining investments will find no better and safer instructor than Mr. Murchison.—*Leeds Times*.

As a guide for the investment of capital in mining operations is inestimable. One of the most valuable mining publications which has come under our notice, and contains more information than any other on the subject of which it treats.—*Derby Telegraph*.

To those who wish to invest capital in British Mines, this work is of the first importance.—*Welshman*.

This work enables the capitalist to invest on sound principles; it is, in truth, an excellent guide.—*Plymouth Journal*.

Persons desirous to invest their capital in mining speculations, will find this work a very useful guide.—*Warwick Advertiser*.

It is full of carefully compiled and reliable information relative to all the known mines in the United Kingdom.—*Sheffield Free Press*.

Those interested in mining affairs, or who are desirous of becoming speculators, should obtain and carefully peruse the work.—*Monmouth Beacon*.

Every person connected, or who thinks of connecting himself, with mining speculations should possess himself of this book.—*North Wales Chronicle*.

A very valuable book.—*Cornwall Gazette*. [Glasgow Examiner.]

All who have invested, or intend to invest, in mines should peruse this able work. We believe a more useful publication, or one more to be depended on, cannot be found.—*Plymouth Herald*.

With such a work in print, it would be gross neglect in an investor not to consult it before laying out his capital.—*Poole Herald*.

Mr. Murchison will be a safe and trustworthy guide, so far as British Mines are concerned.—*Bath Express*.

Of great value to capitalists.—*Sunderland Times*.

Is deserving the attention of every one who seeks profitable investment of his capital.—*Brighton Examiner*.

This is really a practical work for the capitalist.—*Stockport Advertiser*.

THE PRACTICAL MECHANICS' JOURNAL (Part 126)

September, 1858, Price 1s. contains two beautifully finished 40 Copper-plate Engravings of Mr. Joseph Mandelley's Annular Cylinder Engines for Screw Propellers, and Fifty Wood Engravings. Also, Original Articles, the Engineer and the Farmer, Martin's Mineral Shipping Apparatus, International Patent Right, Gourlay's Steam Hoisting Apparatus, Bement's Adjustable Bearings, Baldwin's Indicator, Commissioners of Patents' Report, Copyright of Designs, Mechanical Notes from America, History of the Sewing Machine. Recent Patents: M'Farlane, Moulding; Archibald, Preparing Wool; Wether-upon, Railway Brakes; Johnson, Treating Skins; Martin, Glazing Paper; Maclean, Laying Telegraphs; Johnston, Hats. Reviews, Correspondence, Proceedings of Scientific Societies, Marine Memoranda, Monthly Notes of Scientific Novelties, Lists of Patents and Designs Registered, Law Reports of Patent Cases, &c.—London and Co., Patern-oster-row; Editor's Office (Office for Patents), 47, Lincoln's Inn-Fields.

TO COLLIERY PROPRIETORS, ENGINEERS, BROKERS, AND OTHERS.

IMPORTANT SALE OF COLLIERY PLANT, STEAM ENGINES, &c.

MR. WHEATLEY KIRK respectfully announces that he is honoured with instructions from His Grace the Duke of Newcastle, to OFFER FOR SALE, BY AUCTION, on Wednesday, the 1st of September, on the premises of the well-known SHIREDALE COLLIERY, in the parish of Worsley, Nottinghamshire, adjoining the Shiredales station on the Manchester, Sheffield, and Lincolnshire Railway, between Sheffield and Worsley, the valuable SPARE MATERIALS, PLANT, STEAM ENGINES, &c., lately used in the formation of the said colliery, including—

ONE DIRECT-ACTING PUMPING ENGINE, cylinder 52 in. diameter, stroke 8 ft., with Cornish valves and cylinder, in fine condition.

PAIR of 40-horse power HIGH-PRESSURE HORIZONTAL ENGINES, coupled cylinder 16 in. diameter, stroke 3 ft., with double crank for pumping.

LOCOMOTIVE GEARING, &c., by Musgrave and Son.

ONE HORIZONTAL ENGINE, by Kirk, cylinder 16 in. diameter, stroke 3 ft., with drum 9 ft. diameter for round rope, and ponderous L logs.

PUMPING GEAR, &c., viz.—41 pipes, 14 in.; 30 ditto, 12 in.; 30 ditto, 11½ in.; all 9 ft. long; also seven doorkopses, four H pieces, two slides, and windbores complete: one working barrel, 14 in.; one ditto, 13½ ditto; one ditto, 13 11-16 ditto; one ditto, 11½ ditto; one ditto, 11 ditto; two 10 ft. pulleys, for round rope; 260 yards of round wire rope, nearly new; and other valuable effects.

Full particulars, and descriptive catalogues, which are being prepared, may be obtained at the office of the auctioneer, 4, Kirkgate, Leeds, and Cross-street Chambers, Manchester.

GLAMORGANSHIRE.

TO COLLIERY PROPRIETORS AND COAL SHIPPERS.

IMPORTANT SALE of very valuable LEASEHOLD COLLIERIES AND FARMS, situated in the RHONDDA VALLEY, in the county of GLAMORGAN, within a few yards, and in connection with, the Rhondda-fawr branch of the Taff Vale Railway.

MR. T. WATKINS is instructed to SELL, BY AUCTION (unless previously disposed of, of which due notice will be given), at the Cardiff Arms Hotel, in the town of Cardiff, on Thursday, the 9th day of September, 1858, at Three o'clock in the afternoon for Four o'clock precisely, subject to such conditions of sale as shall be then and there produced.

All that valuable WORKING COLLIERY, with all the PLANT and MACHINERY and BUILDINGS thereon (except the cottages and gardens on building ground sublet), together with the several farms held conjointly therewith, known as the DUNRAVEN COLLIERY, situated in the Rhondda Valley aforesaid, in the parish of Ystradgwylog, in the county of Glamorgan, adjoining to and in connection with the Rhondda branch of the Taff Vale Railway, held under leases for the unexpired terms of 58 and 59 years respectively, on highly advantageous terms, and at unusually favourable royalties, way leaves, and dead rents, comprising the whole of the MINERALS under the Hendrewn, Tydrwg, Hendregein, and portions of Blaencynhonda and Ystradgwylog Farms, in the said parish of Ystradgwylog, containing an area of 965 acres, and including the surface of all the before-mentioned farms, excepting Blaencynhonda and Ystradgwylog, having a surface area of 730 acres.

The property contains all the well-known and celebrated MINERAL MEASURES of the district, with IRONSTONE, BLACKBAND, and valuable STONE QUARRIES, including the celebrated ABERDARE STEAM COAL. The ABERGORCHY SEAM of STEAM COAL is now being worked by two levels, adjoining to and in connection with the Rhondda branch of the Taff Vale Railway; the present output exceeds 150 tons per day, which may at a very moderate outlay be increased to 300 tons per day.

The colliery has a direct communication by the Taff Vale Railway with the Bournemouth pier of Cardiff, and with the Ely Docks and Harbour, from both of which it is distant 24½ miles. It has also a direct communication with the important districts of Staffordshire and Shropshire, by the line of the Newport, Abergavenny, and Hereford Railway.

The colliery horses, sheep, farming stock, and implements may be taken at a valuation, at the option of the purchaser.

Further particulars may be had of the auctioneer, Cardiff; or of Mr. H. J. HOLLIER, solicitor, Aberdare.

IMPORTANT SALE AT THE PENYRHENBLAS MINE, NEAR HOLYWELL, FLINTSHIRE.

MR. JAMES WILLIAMS has the pleasure to announce that he is

favoured with the instructions of the proprietors to DISPOSE OF, BY PUBLIC AUCTION, on the said premises, on Tuesday, the 14th of September, 1858, commencing at Eleven for Twelve o'clock precisely, the valuable PLANT and MATERIALS, POWERFUL STEAM-ENGINE AND APPENDAGES, TOOLS, IMPLEMENTS, and an extensive variety of miscellaneous articles of use, comprising—

An excellent 45 in. cylinder CONDENSING STEAM ENGINE, 7 ft. stroke of piston, with two cylindrical boilers, each 33 ft. long by 5 in. diameter, replete with steam case, regulating valves and connecting pipes, &c.

Powerful 8 arm capstan, shears and rope; balance box, with 24 yards connecting rods in shaft; 39 pieces of 11 in. pumps, each 9 ft. long; 13 of 12 in. ditto, and one ditto of 4½ in. long; plunger pole and case, 11 in.; H piece and windbore complete, one door-rod, 11 in. long; windbore; about 100 rods of main rods, 10½ in. square, with plate and pins complete; about 45 yards of pump rods, with ditto for drawing lift ditto; cistern for plunger lift, strong staples for plunger pole, drawing lift and set off complete; set of plates for T bob, with carriage complete; three buckets for 11 in. barrel, clack case and shells, pump rings and pins, pair of capstan pulleys, pair of strong yokes, door clack pieces, working barrels and windbores of various dimensions, match pieces and pumps; about 400 yards of 2½ and 2 in. wrought-iron rails, and chairs for ditto; about 300 yards of flat-rod; scrap, cast, and wrought-iron; pulleys of various sizes, cast-iron wheels for wagons, tires, eight new iron wagons and kibbys, whineys complete, sets of chains for ditto and heavy work, air machine, new and second-hand wheel-burrows, carpenter's bench and tools, smithy tools and implements, jack block, stretching screw, large bell, a quantity of wooden railing, useful boards and timber, sundry office furniture, &c.

Also, the COMPANY'S INTEREST IN THE MINING GROUNDS (embracing about 170 acres), held under a lease granted by the Marquis of Westminster, at a moderate royalty, for an unexpired term of ten years.

Descriptive catalogues of the whole will be published, and may be had five days prior to the sale, with any further information, by applying to Mr. THOMAS HUNT, at the mine; or to the auctioneer, at his office, Maes-y-dre, Holywell.

HIGHLY IMPORTANT AND EXTENSIVE SALE AT THE HENDRE MINES, NEAR MOLD, FLINTSHIRE.

TO LEAD MINE AND COLLIERY OWNERS, ENGINEERS AND MACHINISTS, IRONFOUNDERS, MILLWRIGHTS, BROKERS, AND OTHERS.

MR. JAMES WILLIAMS has much pleasure in announcing that he is

favoured with the instructions of the former lessees of these mines to SUBMIT TO SALE, BY PUBLIC AUCTION, on the said premises, on Monday, the 30th Sept., 1858, and following days, until the whole is disposed of, all their very valuable POWERFUL CONDENSING, PUMPING, AND WINDING ENGINES, WINDING APPARATUS, CRUSHING MILL, WATER-WHEELS, PLANT, and MACHINERY, WEIGHING MACHINE, 12½ in. LATHE, TOOLS, IMPLEMENTS, UTENSILS, and a great variety of other useful miscellaneous effects, consisting of, chiefly—

ONE SINGLE POWER 50 in. PUMPING ENGINE, with beam of equal length, 10 ft. stroke of piston, fixed upon a strong cast-iron foundation; four cylindrical boilers with tubes, each 38 ft. long by 5½ diameter, and connections; 24 in. plunger pole and case, stuffing-box and gland, clack doorkopses, H piece, windbore, and 70 yards of 24 in. pump rods.

ONE 20 in. cylinder PUMPING AND WINDING CONDENSING ENGINE, 4 ft. stroke, double power and connections complete, with two cylindrical boilers, one 33 ft. long by 6½ diameter, and the other 30 ft. long by 5 in. diameter, with windbore, H piece, and clack doorkope.

ONE DOUBLE POWER 16 in. cylinder PORTABLE CONDENSING STEAM-ENGINE, working on 2 ft. stroke, the cylinder fitted with slide valve and eccentric gear; beam with parallel motion, connecting rod, &c., and two cylindrical boilers, one 37 ft. long by 3½ in. diameter, and the other 16½ ft. long by 3½ in. with steam pipes, pumping gear, &c.

CRUSHING MILL, with three rollers, fly-wheel, &c.

WINDING APPARATUS, with reversing motion, pulleys, chains, &c.

CAST-IRON WATER-WHEEL, 12 ft. diameter, 3 ft. breast, wrought-iron shaft, brass pedestals, crank, &c.

ONE WOODEN WATER-WHEEL, 9 ft. diameter, 3 ft. breast, with iron break, &c.

Shear legs, capstans, pulleys and ropes, balance-bobs, counter boxes, pit-head work, &c.; two 18 in. plunger poles and cases, 12 ft. long, with stuffing-box and gland, H piece and windbore, one windbore for sinking, clack piece and door, and 17 in. working barrel, 11 ft. long; other windbores, clack doors, and H pieces for various sized plungers, &c.; a large quantity of 19 in. pumps, matching pieces for ditto, and other sized pumps; 17 and 18 in. plunger poles, clack doorkopses, clack pieces and windbores for each; plunger pole for 9 in. lift, 11 ft. long; H piece for ditto, with door, stuffing-box and gland; windbore case, gland, and spindle for 12 in. lift; flange and socket pipes of various diameters; a large quantity of wrought-iron plates for main rods, joints, claps, &c.; two wrought-iron boiler tubes, 21 ft. long by 2½ in. diameter; strong wrought-iron yokes of different sizes, a large quantity of flat and round wrought-iron rods, ditto capstan and other ropes; brass valves, seats, and glands; scrap copper, brass, and lead; ditto wrought and cast-iron, old files, guage percha for gearing, &c.; large wrought-iron steel-yard for weighing pumps, &c.; weighing machine up to 8 tons; capital 12½ in. turning lathe, flexible wooden patterns, and set of new iron wagons, cast-iron mandrills, 9 and 24 in. diameter; cranes, tongs, mandrills, &c.; an immense quantity of wrought-iron rails, Locomotor and Bowring (or engine) bars, hammered iron and common bars, staples, glands, and nuts, wrought-iron lifts for buckets, joints for lifts, and a host of other articles of general utility in concerns of this description, which, with the above, will be fully described in catalogues, to be had eight days prior to the sale, of Mr. ROBERTS and Mr. JOHN PRICHARD, at the mines; at the Black Lion Hotel and Royal Oak Inn, Mold; or of Mr. C. D. WILLIAMS, Greenfield, Holywell; or of the auctioneer, at his office, Maes-y-dre, Holywell.

The Hendre Mines are distant from Mold about three miles, and Holywell eight, both first-class stations on the Chester and Holyhead Railway. The premises also adjoin the Mold and Denbigh turnpike-road.

COPPER AND NICKEL MINES.—THE HOLDERS of a

METALLIC MINERAL CONCESSION IN SWITZERLAND are WILLING to TRANSFER RIGHTS and PRIVILEGES upon TERMS HIGHLY ADVANTAGEOUS to the PURCHASER. This concession contains several deposits of copper, but is more especially valuable for its numerous rich nickel lodes, which can be traced for a great distance. Parties desirous of acquiring the right to raise the ore for a fixed term of years would also be treated with. Address, for further particulars, prepaid and in French, to Mr. POULET, Ingenieur Civil des Mines, Rue Vinetex 25, à Liège, who is entrusted with the sale of some valuable sulphur (iron pyrites) mines.

TO BE SOLD, BY PRIVATE TREATY, THE UNEXPIRED

TERM OF LEASE of certain extensive and valuable LEAD MINES, situated between the towns of Newtownards and Bangor, in the county of Down, Ireland, and called the NEWTOWNARDS MINES; together with the MACHINERY, TOOLS, IMPLEMENTS, STORES, and MATERIALS, thereto belonging; including FIVE STEAM-ENGINES, EXCELLENT CRUSHING MILLS, and every requisite convenience for carrying on an extensive business. These mines have already yielded in profits £25,000 carrying on an extensive business. It is now requisite to open out new ground, of which there is a large extent unexplored; from the nature of the Deed of Association, the directors are unable to make calls upon the shareholders, and it has been determined to dispose of the mine.

The LEASE, which comprises the whole townland of White Spots, is held for the life of a healthy young man, 19 years of age, together with an unexpired term of six years from the 1st November last. The works are conveniently situated within a few miles from the port of Bangor, where the mining company have a store.

A few spirited adventurers, willing to embark a moderate capital, will find this most favourable opportunity, offering fair and reasonable prospects of success.

Terms and particulars may be known upon application to W. BECKWITH, Esq., Douglas, Isle of Man; or Mr. H. B. NORRIS, Secretary of the Newtownards Mining Company, Douglas.—April 7, 1860.

TO MINING COMPANIES, CHEMISTS, CAPITALISTS, &c.

THE ADVERTISER, having been engaged in manufacturing chemicals, and made many valuable practical improvements in chemistry, is desirous of ASSISTING PARTIES with his ADVICE and EXPERIENCE, feeling that many losses, from his own experience, have occurred to parties engaging in chemical pursuits, which might have been prevented by obtaining some practical advice.

N.B.—The advertiser has been engaged by several of the leading makers to decide new processes.

He wishes to draw the attention of capitalists to the following:—Reducing copper ore, sulphur from muddle, sulphate of copper, sulphuric acid, manures, &c.

All letters to be addressed to "Practical Chemist," *Mining Journal* office, enclosing two stamps for reply and information required. Fees moderate.

SPARE MINING MATERIALS FOR SALE, at REETH

CONSOLS MINE, Towardack, near St. Ives, by PRIVATE CONTRACT.

One 40 in. cylinder PUMPING ENGINE, 7 ft. stroke in the shaft, and 8 ft. stroke in the cylinder, with 18 tons of boilers and connections complete.

Also, one 22 in. cylinder STEAM WHIM, 8 ft. stroke, with perpendicular cage nearly new, 130 fms. of pitwork of various sizes, with shaft rods and various other materials. For further information, apply to Captain CHAMBERS, on the mine; or to Mr. H. W. LAMSON, St. Ives.

STEAM-ENGINES AND WATER-WHEEL, &c., FOR SALE.

—A 32 in. cylinder CONDENSING PUMPING ENGINE, 9½ ft. stroke, cylinder quite new, with cylinder case; boiler 11 tons, and outfit complete.

A 14 in. cylinder HORIZONTAL DOUBLE CONDENSING PUMPING ENGINE, 6 ft. stroke, with a 5 ton boiler complete.

A 11½ in. cylinder HIGH-PRESSURE TABLE ENGINE, with metallic piston, wrought-iron fly-wheel shaft, and 11 ft. diameter fly-wheel.

A WATER-WHEEL, 25 ft. diameter, 3½ ft. breast, oak axle and rings, two cranks, saddles and brasses; one 13 in. doorkope, one 13 in. working barrel, one 11 in. ditto, various pumps and windbores. Also, a good balance-bob and shaft bob.

The above machinery is in very good condition, and will be sold cheap.—For further particulars, apply to Mr. W. B. HARVEY, Tavistock, Devon.

TO BE SOLD, BY PRIVATE CONTRACT, a new 40-inch

CYLINDER ENGINE, with boiler about 10 tons.—For a view of the same, apply to Capt. RICHARD REYNOLDS, Trellis, in the parish of St. Kew; and for further particulars, and to treat for the same, to Captain WILLIAM RICHARDS, Bank House, Redruth, Cornwall.

FOR SALE, a 24 in. WHIM HORIZONTAL ENGINE, with a

10 tons boiler, very new, in excellent condition, and drawing machine attached. As this engine is very superior in make and condition, parties requiring one will do well to examine it.—Apply to Mr. C. WESCOMB, 21, Southemhay, Exeter.

BRINTAL COAL TO BE LET.—This vein of coal is 4 feet in

thickness. It is the Red Ash coal vein, well known in the market under the name of the Mynddysgynne Mae Mawr, Lantwit, and dyllygyn vein. The pit where it has been discovered and proved to exist in abundance is 7 ft. only, through shale, fire-clay, and ironstone, rising at a very small angle to the north-east and north-west. The level to this pit will be about 50 yards in length, through the coal, from the surface. The extent of the coal field workable through this level is about 700 acres. The distance from the Glamorganshire Canal is less than half a mile; from the port of Cardiff, eleven miles; and from the Treforest station on the Taff Vale Railway, one mile. Mr. W. H. Harrison, the well-known mineral engineer, estimates the total cost of working out 100 tons of coal daily to the market, within nine months from the time the works will be commenced, at £1354.

All the other sublying measures of coal, ironstone, fire-clay, and limestone, in the South Wales mineral formations, are workable by level from a lower elevation, from the same estate, where there is an excellent

OVERLAND ROUTE.—WEEKLY COMMUNICATION BY
THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY
 PASSENGERS AND FREIGHTS BY STEAMERS TO THE MEDITERRANEAN,
 INDIA, AFRICA, CEYLON, MADRAS, CALCUTTA, THE STRAITS, CHINA, and
 MANILA, by their steamers leaving Southampton on the 4th and 20th of every month;
 and for the MEDITERRANEAN, EGYPT, ADEN, and BOMBAY, by their packets
 leaving Southampton about the 11th and 27th of the month.
 For further particulars, apply at the company's offices, No. 122, Leadenhall-street; and
 at Oriental-place, Southampton.

STEAM UNDER SIXTY DAYS ELAPSED.
 The *Manco Polo* of this line sailed with the steam-ship *ROYAL CHARTER* from
 Melbourne, and arrived in Liverpool eight days before her.
PASSAGE MONEY £14 AND UPWARDS.

BLACK BALL LINE BRITISH AND AUSTRALIAN
EX-ROYAL MAIL PACKETS.
 Appointed to sail from LIVERPOOL on the 5th of each Month,
 FOR MELBOURNE.

Ship.	Register.	Burthen.	Captain.	Date.
ELLEN STUART	1888	4000	DAVIES	5th September.
GREYHOUND	1410	4000	DAVIES	5th October.
BRITISH THUNDER	1655	4000	O'SHEA	5th November.
MAHMOUD	2090	4500	BERKE	5th December.
MARCO POLO	1625	3500	CLARKE	5th January.
DONALD MCKAY	2904	5000	TOLIN	5th February.

The above line is composed of the LARGEST, the FINEST, and the FASTEST MER-
 CHANT SHIPS in the WORLD, and have been built by the most celebrated builders of
 the day, including Messrs. J. & A. Rankine, of Glasgow. They are commanded by men who have already
 sailed themselves famous, and their equipments and accommodations are unequalled
 by any line of ships afloat.

The Black Ball Line has had the distinguished honour of a visit from Her Majesty the
 Queen, who was most graciously pleased to say that she had no idea there were such
 magnificent ships in her merchant navy.
 Freight and passage, apply to the owners, JAMES RANKINE and Co., Liverpool; or to
 T. M. MACKEY and Co., 2, Moorgate-street, London, E.C.

PASSAGE MONEY £14 AND UPWARDS.
WHITE STAR LINE OF BRITISH AND AUSTRALIAN
EX-ROYAL MAIL PACKETS.

SAILING BETWEEN
LIVERPOOL AND MELBOURNE, on the 20th and 27th of every month,
 and forwarding Passengers by Steamers at through rates to
ALL PARTS OF AUSTRALIA.
 To the consignments of H. T. Wilson and Co., Melbourne.

Ship.	Captain.	Register.	Burthen.	To sail.
MERMAID	J. WHITE	1320	4500	Sept. 20.
TASMANIA	NICHOL	1188	4500	Sept. 27.
SHALIMAR	J. R. BROWN	1432	4500	Oct. 20.
RED JACK	M. H. O'HALLORAN	2460	5000	—
WHITE STAR	T. C. C. KERR	2360	5000	—

The famous clipper ship *Mermaid*, Capt. James White, late chief officer of the *White*
Star, will be dispatched as the packet of the 20th September, with mails, cargo, and pas-
 sengers. She has made some of the quickest passages on record, and has sailed the ex-
 traordinary distance of 3740 geographical miles in 13 successive days. Her outward
 passages have been made in 72, 75, and 77 days, and from Melbourne to Liverpool in 75
 and 77 days. Her saloons are handsome, and elegantly furnished.

The magnificent packet ship *Tasmania* is remarkably fast, and is now on her second
 voyage in this line. Her saloons are spacious, and handsomely furnished. Bed, bedding,
 and necessities for saloon passengers in all the ships.
 Passengers embark on the 20th and 27th of September.
 For freight or passage, apply to the owners, H. T. WILSON and CHAMBERS, 21, Water-
 street, Liverpool.

AUSTRALIA.—WHITE STAR CLIPPERS.
 The famous clipper ship, *MERMAID*, 1320 tons register, 4500 tons bur-
 then, Capt. JAMES WHITE, late chief officer of the *White Star*. This well-
 known and splendid clipper will be dispatched as the packet of the 20th Sept.,
 with mails, cargo, and passengers. She has made some of the quickest passages
 on record, and has sailed the extraordinary distance of 3740 geographical miles in 13 suc-
 cessive days. Her outward passages have been made in 72, 75, and 77 days, and from
 Melbourne to Liverpool in 75 and 77 days. Her saloons are handsome and elegantly fur-
 nished. Bed, bedding, and linen for saloon passengers. Passengers embark on Monday,
 the 20th September. For freight or passages apply to the owners, H. T. WILSON and
 CHAMBERS, 21, Water-street, Liverpool.

MOST IMPORTANT TO COLLIERY OWNERS AND
COLLIERY MANAGERS.
HENRY J. MORTON AND CO.,
GALVANISED IRONWORKS, 2, BASINGHALL BUILDINGS, LEEDS.

IMPROVED SIGNAL BELLS.
 especially prepared to meet the requirements of the new Act for the Inspection of Coal
 Mines. It has met with the decided approval of many large colliery owners and man-
 agers. **SIMPLE, EFFICIENT, AND CHEAP.** Price 15s., 17s. 6d., and 20s. each.
BYRAM'S PATENT ANEMOMETER, for testing the ventilation.
 Price £2 10s., £3 3s., and £4 4s. each.

STEAM PRESSURE GAUGES, very strong and accurate, £2 and £2 12s. 6d. each.
 For further particulars apply to
H. J. MORTON AND CO., 2, Basinghall-buildings, Leeds.

FAIRBANK'S IMPROVED PATENT WEIGHING MACHINES,
 for the use of IRONWORKS, COLLIERIES, RAILWAYS, WAREHOUSES,
 STORES, &c.
 The most ACCURATE MACHINES in use, and the cheapest.
 MACHINES of all sizes, from 1 cwt. to 30 tons, for RAILWAY WAGONS, CARTS, or
 WAGONS.
 For prices and all other information, apply to
HENRY J. MORTON AND CO., GALVANISED IRONWORKS,
2, BASINGHALL BUILDINGS, LEEDS.
 Patent Asphalting, Boiler Felt, Galvanised Iron, Mining Stores, &c., in
 Stock.

GAS ENGINEERING.—GAS WORKS ERECTED FOR PRIVATE
 USE, as well as for VILLAGES, TOWNS, or CITIES, at home or abroad. Old
 Gas Works Retailed and Leased. References to fifty gas works.
GEORGE BOWER, St. Neots, Hunts.

BENSON'S WATCHES.
 Excellence of design and perfection of workmanship.—*Morning Chronicle*.
 The quality of his watches stand second to none.—*Morning Advertiser*.
 All that can be desired in finish, taste, and design.—*Globe*.
 The watches here exhibited surpass those of any other English manufacturer.—*Observer*.
 Those who cannot personally inspect this extensive and costly stock should send
 two stamps for *Benson's Illustrated Pamphlet*, containing important information requisite in
 the purchase of a watch, and from which they can select with the greatest certainty the
 one adapted to their use. **SILVER WATCHES** from 2 to 50 guineas; **GOLD WATCHES**,
 from £1 15s. to 100 guineas. Every watch warranted, and sent post paid to any part of
 England, Scotland, Ireland, or Wales, upon receipt of a remittance. Merchants, ship-
 pers, and watch clubs supplied. Watches exchanged or repaired. Manufacturer, 33 and 34,
 Ludgate-hill, London, E.C. Established 1749.

MAPPIN'S "SHILLING" RAZORS, warranted good by the
 maker, shave well for twelve months without grinding.
MAPPIN'S 2s. RAZORS, shave well for three years.
MAPPIN'S 3s. RAZORS (suitable for hard or soft beards), shave well for ten years.
MAPPIN BROTHERS, QUEEN'S CUTLERY WORKS, SHEFFIELD; and No. 67, KING
 WILLIAM STREET, CITY, LONDON; where the LARGEST STOCK OF CUTLERY in
 the world is kept.

MAPPIN'S ELECTRO-SILVER PLATE & TABLE CUTLERY.
 —MAPPIN BROTHERS (Manufacturers by Special Appointment to the Queen) are
 the only Sheffield makers who supply the consumer in London. Their London Show
 Rooms, 67 and 68, KING WILLIAM STREET, LONDON BRIDGE, contain by far the LARGEST
 STOCK OF ELECTRO-SILVER PLATE and TABLE CUTLERY in the world, which is
 transmitted direct from their manufactory, QUEEN'S CUTLERY WORKS, SHEFFIELD.

	Fiddle Pat.	Double Thread.	King's Pat.	Lily Pat.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0 0	£3 12 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0 0	3 12 0
12 Dessert Forks, best quality	7 0	2 0 0	2 4 0	2 14 0
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4 0	2 14 0
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7 0	1 16 0
2 Sauce Ladles, best quality	0 8 0	0 10 0	0 11 0	0 13 0
1 Gravy Spoon, best quality	0 7 0	0 10 0	0 11 0	0 13 0
4 Salt Spoons (gilt bowls), best qu.	0 6 8	0 10 0	0 12 0	0 14 0
1 Mustard Spoon, best quality	0 1 8	0 2 6	0 3 0	0 3 6
1 Pair Sugar Tongs, best quality	0 3 6	0 5 6	0 6 0	0 7 0
1 Pair Fish Carvers, best quality	1 0 0	1 10 0	1 14 0	1 18 0
1 Butter Knife, best quality	0 3 0	0 5 0	0 6 0	0 7 0
1 Soup Ladle, best quality	0 12 0	0 16 0	0 17 6	1 0 0
6 Egg Spoons (gilt), best quality	0 10 0	0 15 0	0 18 0	1 1 0

Complete Service £10 13 0 £15 16 6 £17 13 6 £21 4 6
 Any article can be had separately at the same prices.
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 Covers (one 20 in., and three 14 in.), £10 10s.; Cruet Frame (four glass), 24s.;
 Full Size Tea and Coffee Service, £29 10s. A Costly Book of Engravings, with prices at-
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Ord. qual. Medium qual. Best qual.
 Two dozen Full Size Table Knives, Ivory Handles £2 4 0 £3 6 0 £4 12 0
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 One Steel for Sharpening 0 3 0 0 4 0 0 6 0

Complete Service £16 10 0 £26 18 6 £29 16 6
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 blades, being their own Sheffield manufacture, are of the very first quality, with secure
 ivory handles, which do not come loose in hot water, and the difference in price is occa-
 sioned solely by the superior quality and thickness of the ivory handles.

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 IN STOCK—FOR SALE OR HIRE.

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 OLDURY, NEAR BIRMINGHAM.
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Ashcroft, F.	Bridgewater, H.	Moate, C. R.
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Barlow, W. L.	Deall, A.	Prince, Paul.
Barnhill, W.	Macdonnell, J. J.	Richardson, R.
Bergue, C. de.	Macdonnell, Sir John.	Sammel, James.
Billips, J. E.	Manell, R. C.	Wild, C. H.
		Woodhouse, W. H.

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 This machine will be found invaluable at the GOODS DEPOTS OF RAILWAYS, in
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10000	Bampfylde (copper), Devon	0 12 6	1 1/2	1 1/2	0 0 7 1/2	0 0 7 1/2—May 12, 1888.
4000	Balford United (copper), Tavistock†	2 6 8	6 1/2	6 1/2	10 3 0	0 4 0—June 18, 1888.
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200	Bratall (tin), cop., St. Just	91 8 0	170	170	425 15 0	10 0 0—Aug. 17, 1888.
1200	Brightside and Froggatt Grove, Derbyshire	3 0 0	3 1/2	3 1/2	3 0 0	3 0 0—April 30, 1886.
100	Bryndall Hall (lead), Flintshire	25 0 0	50	50	13 0 0	5 0 0—July 31, 1886.
1000	Bryntall, Llanidloes, Montgomeryshire	7 15 0	1 1/2	1 1/2	0 5 0	0 5 0—July 1, 1886.
400	Budnick Consols (tin), Parnan	2 2 6	4 1/2	4 1/2	0 10 0	0 10 0—March 26, 1887.
6000	Bwch (silver-lead), Cardiganshire	3 5 6	1 1/2	1 1/2	0 2 6	0 2 6—July 30, 1886.
4096	Calstock Consols (copper)	5 0 0	5 1/2	5 1/2	0 2 6	0 2 6—Dec. 23, 1887.
1000	Caru Brea (copper, tin), Illogan	15 0 0	54 1/2	52 1/2	245 10 0	2 0 0—Aug. 5, 1888.
2048	Carnarvon (tin), St. Just	4 10 0	6	6	0 15 0	0 3 0—June 16, 1886.
2000	Cefn Cwru Brynno (lead), Cardiganshire	33 0 0	43	43	5 0 0	2 0 0—March 25, 1888.
2000	Collicombe (copper), Llanerth	5 0 0	15	15	2 5 0	0 8 0—Dec. 2, 1887.
256	Conduvor (copper, tin), Camborne [S.E.]	20 0 0	60	60	85 0 0	0 0—June 10, 1887.
12000	Copper Miners of England	25 0 0	27	27	7 1/2 per cent.	— Half-yearly.
300000	Doitto ditto (stock)	100 0 0	30	30	1 1/4 per cent.	— Half-yearly.
1055	Craddock Moor (copper), St. Cleer	8 0 0	38 1/2	38 1/2	1 14 0	0 5 0—July 9, 1888.
30000	Craven Moor, Limited (lead), Yorkshire	0 10 0	3	3	0 0 9	0 0 9—Feb. 28, 1886.
128	Cwmystwith (lead), Cardiganshire	60 0 0	250	250	140 0 0	15 0 0—Aug. 19, 1888.
280	Derwent Mines (silver-lead), Durham	300 0 0	150	150	122 0 0	10 0 0—June 25, 1887.
4076	Devon and Cornwall (copper)	4 6 3	9	9	0 7 6	0 2 6—April 20, 1888.
1024	Devon Great Consols (cop.), Tavistock* [S.E.]	1 0 0	475	455 465	625 0 0	8 0 0—July 23, 1888.
672	Ding Dong (tin), Gwulaf	33 15 0	16	16	16 7 6	1 10 0—March 2, 1887.
179	Dolcoath (copper, tin), Camborne*	257 15 0	270	270	967 0 0	7 0 0—Aug. 9, 1888.
12880	Drake Walls (tin, copper), Calstock	2 0 0	1 1/2	1 1/2	0 13 6	0 2 0—Sept. 11, 1887.
300	East Darn (lead), Cardiganshire*	32 0 0	115	115	48 0 0	3 0 0—Aug. 12, 1888.
3048	East Falmouth (copper), Gwennap	2 0 0	3	3	0 7 6	0 2 6—Jan. 25, 1888.
128	East Falmouth (copper), North Illogan	24 5 0	175	175	297 10 0	2 10 0—Feb. 22, 1884.
1024	East Wheal Margaret (tin, copper)	7 17 6	8	8	0 5 0	0 5 0—Jan. 11, 1884.
8700	Exmouth (silver-lead), Christow	4 14 8	8	8	3 15 0	0 2 6—April 27, 1888.
1400	Eyan Mining Company (lead), Derbyshire	5 0 0	38	38	18 13 4	1 0 0—Aug. 20, 1888.
4940	Fowey Consols (copper), Tywardreath	4 0 0	3 1/2	3 1/2	41 4 3	0 6 0—Feb. 17, 1887.
4448	General Mining Co. for Ireland (cop., lead)	4 0 0	1 1/2	1 1/2	1 0 8	0 3 3—June 5, 1888.
2000	Goginan (silver-lead), Cardiganshire	11 5 0	2 1/2	2 1/2	22 0 0	0 5 0—Sept. 8, 1880.
1024	Gonnamena (copper), St. Cleer	13 15 0	2 1/2	2 1/2	0 7 6	0 7 6—Dec. 21, 1882.
243	Graham and St. Aubyn (copper)	109 10 0	135	145 150	12 0 0	2 0 0—July 6, 1888.
6000	Great South Tolgus [S.E.] Redruth	0 14 6	16	15 16	2 12 6	0 6 0—Aug. 19, 1888.
26666	Great Wheal Vor (tin, cop.), Helston [S.E.]	8 7 6	2	2 1/2 3 1/2	0 5 0	0 5 0—Oct. 22, 1885.
119	Great Work (tin), Gernoe	100 0 0	110	110	221 10 0	7 10 0—Feb. 27, 1887.
1024	Herodstoft (lead), near Liskeard	8 10 0	7	7 1/2 7	4 7 6	0 12 6—June 11, 1888.
6000	Hilfingdon Down Consols (copper), Calstock	3 12 6	3 1/2	3 1/2 3 1/2	2 16 0	0 2 6—Nov. 25, 1886.
2000	Holford (copper), near Tipperary	11 0 0	8 1/2	8 1/2	4 2 6	0 5 0—Jan. 28, 1887.
2560	Isle of Man, Limited (lead)†	25 0 0	42	42	58 8 3	1 0 0—June 22, 1888.
76	Jamaica (lead), Mold, Flintshire	3 13 6	—	—	380 0 0	5 0 0—March 10, 1881.
20	Lacey Mining Company, Isle of Man	100 0 0	1000	1000	1420 0 0	50 0 0—June 30, 1887.
160	Levant (copper, tin), St. Just	2 10 0	120	120	1071 0 0	5 0 0—Aug. 17, 1888.
6000	Lewis Mines (tin, copper), St. Erth	6 11 1	2	2	0 10 0	0 10 0—Dec. 20, 1885.
400	Lisburne (lead), Cardiganshire, Wales*	18 15 0	120	120	315 10 0	2 0 0—Aug. 5, 1888.
6000	Marke Valley (copper), Cardigan	4 10 6	3	3	0 5 6	0 3 0—Sept. 7, 1886.
5000	Mendip Hills (lead), Somerset	3 15 0	1 1/2	1 1/2	1 13 6	0 6 0—May 31, 1888.
5000	Merilyn (lead), Flint	3 2 6	1 1/2	1 1/2	1 11 0	0 2 6—June 22, 1883.
1800	Misera Mines, Limited (lead), Wrexham	25 0 0	125	125	30 2 6	3 0 0—May 8, 1888.
50000	Mineral Company of Ireland (cop., lead, coal)	7 0 0	15	14 1/2	13 13 4	0 5 0—July 1, 1888.
5000	Nantes and Penrhyn, Limited (£2 1/2 shares)	1 17 6	1 1/2	1 1/2	0 1 6	0 1 6—April 30, 1885.
6400	Nether Heath, Westmoreland	0 7 0	1 1/2	1 1/2	0 2 0	0 1 0—May 21, 1886.
470	Newtonards Mining Company, Co. Down†	50 0 0	35	35	55 0 0	1 0 0—July 1, 1888.
200	North Pool (copper, tin), Pool	40 18 0	10	10	324 0 0	2 0 0—Dec. 26, 1884.
700	North Pool (copper), Camborne	12 0 0	24	24	750 0 0	4 0 0—Sept. 26, 1885.
6000	North Wheal Bassett (cop., tin), Illogan [S.E.]	mit.	9 1/2	9 1/2 9 1/2	14 12 0	6 0 0—Aug. 25, 1888.
6400	Par Consols (copper), St. Blazey [S.E.]	1 2 6	17	16 1/2 17	32 5 0	0 11 0—June 6, 1888.
530	Peak United (lead), North Derbyshire	7 15 0	2 1/2	2 1/2	4 10 0	0 10 0—April 12, 1886.
200	Phoenix (copper, tin), Linkinhorne	100 0 0	370	370	230 10 0	25 0 0—May 1, 1888.
1000	Polberron (tin), St. Agnes (Preferential)	15 0 0	5	5	18 11 9	1 0 3—July 11, 1887.
1772	ditto ditto (Old and ditto)	20 13 2	6	6	1 0 0	0 10 0—March 2, 1888.
560	Providence Mines (tin), Ury Lelant†	20 13 2	64	60 62 1/2	76 4 6	2 0 0—Aug. 25, 1888.
2500	Rhowydol and Bacheiddon (lead)	11 5 0	12	12	0 16 0	0 3 0—July 21, 1888.
512	Rosewarne United (copper, tin), Gwennap*	12 0 0	25	40 45	32 10 0	1 10 0—June 8, 1887.
15000	Ruanleah Colliery Company, Limited	0 5 0	1 1/2	1 1/2	0 0 10 1/2	0 6 0—Feb. 4, 1888.
12000	Sordridge Consols (cop.), Whitechurch [S.E.]	0 6 0	1	1 1/2 1 1/2	0 10 0	0 2 6—July 27, 1887.
256	South Carnarvon (copper), St. Cleer* [S.E.]	2 10 0	465	465	530 0 0	10 0 0—July 27, 1888.
128	South Crinnis (copper), St. Austell	19 0 0	255	255	60 0 0	20 0 0—June 18, 1885.
512	South Tolgus (copper), Redruth, Cornwall	8 0 0	65	72 1/2 75	76 0 0	1 0 0—Aug. 5, 1888.
456	South Wheal Frances, Illogan* [S.E.]	18 18 0	205	205	301 5 0	7 0 0—July 5, 1888.
1024	Sparrow Consols (tin), St. Just, Cornwall	3 12 0	1 1/2	1 1/2	8 8 6	0 2 6—Dec. 10, 1883.
280	Sparrow Moor (copper), St. Just†	23 7 8	15	15	4 5 0	0 10 0—June 13, 1886.
970	St. Aubyn and Gwulaf (cop., tin), Breage	6 2 4	4 1/2	4 1/2	45 17 6	9 7 0—Aug. 1, 1888.
20000	St. Day United (tin and copper)	2 0 0	3 1/2	3 1/2	0 3 6	0 1 0—Feb. 23, 1885.
470	St. Ives Consols (tin), St. Ives	16 0 0	30	30	917 13 0	1 10 0—Aug. 17, 1888.
9800	Tamar Consols (silver-lead), Beeralston [S.E.]	4 10 0	3 1/2	3 1/2	4 13 6	0 2 6—Feb. 7, 1886.
6000	Tincoff (copper, tin), Pool, Illogan [S.E.]	9 0 0	4	3 1/2 3 1/2	8 13 6	0 10 0—Feb. 18, 1888.
572	Trevelyan Consols (tin), St. Ives	11 10 0	9 1/2	9 1/2	1 15 0	1 0 0—Feb. 21, 1884.
120	Trevelyan (copper), Gwennap, Cornwall	15 10 0	15	15	408 13 6	2 10 0—April 29, 1881.
4096	Trevelyan (silver-lead), Menheniot, Cornwall	2 14 0	1 1/2	1 1/2	1 12 0	0 3 0—April 2, 1887.
100	Trumpet Consols (tin), near Helston	95 0 0	12 1/2	12 1/2	55 0 0	5 0 0—Dec. 20, 1884.
400	United Mines (copper), Gwennap [S.E.]	40 0 0	82 1/2	90 95	61 5 0	2 0 0—Feb. 12, 1886.
20000	Valley of Towry (lead), Carnarthen [S.E.]	0 12 6	1	1 1/2 1	0 5 9	0 1 0—July 8, 1888.
512	Wendron Consols (tin), Wendron	29 7 8	35	35	2 0 0	1 0 0—Sept. 22, 1887.
6000	West Bassett (copper), Illogan* [S.E.]	1 10 0	22	21 22	14 10 0	0 14 0—July 28, 1888.
256	West Carnarvon (copper), Liskeard [S.E.]	20 0 0	100	90 100	287 5 0	2 0 0—May 26, 1888.
512	West Damsel (copper), Gwennap	12 17 0	115	115	22 0 0	2 0 0—July 20, 1887.
6400	West Fowey Consols (tin and copper)	7 0 0	8 1/2	8 1/2	0 2 6	0 2 6—March 5, 1883.
1024	West Providence (tin), St. Erth†	2 11 7	3	3	33 19 0	0 10 0—April 8, 1887.
400	West Wheal Seton (copper), Camborne*	38 10 0	300	270	132 0 0	7 10 0—Aug. 17, 1888.
6140	Wheal Arthur (copper), Calstock	2 1 0	1	1	6 10 0	0 10 0—Oct. 25, 1885.
204	Wheal Bai (tin), St. Just	15 0 0	18	18	2 10 0	0 10 0—May 11, 1888.
512	Wheal Bassett (copper), Illogan [S.E.]	5 2 4	200	190 200	455 17 6	9 7 0—Aug. 1, 1888.
256	Wheal Buller (copper), Redruth* [S.E.]	5 0 0	190	190	885 0 0	7 10 0—July 29, 1888.
1024	Wheal Charlotte, Parnan†	5 3 4	7	7	1 10 0	0 10 0—Sept. 9, 1885.
250	Wheal Clifford (copper), Gwennap	5 10 0	4	4 1/2	42 0 0	3 0 0—Oct. 26, 1887.
4096	Wheal Edward (copper), Calstock [S.E.]	mit.	1	1	0 2 4	0 1 6—Jan. 6, 1888.
6000	Wheal Fortescue (copper), Bodmin	mit.	1	1	2385 10 0	10 0 0—Feb. 11, 1888.
128	Wheal Friendship (copper), Devon	50 0 0	80	80	0 2 0	0 2 0—Feb. 24, 1887.
1024	Wheal Grylls (copper, tin), Breage	0 4 0	1 1/2	1 1/2	8 10 0	1 10 0—Oct. 16, 1887.
512	Wheal Jane (silver-lead), Kea	3 10 0	20	20	0 6 0	0 5 0—March 24, 1887.
6000	Wheal Kitty (tin), St. Agnes	4 10 0	4	3 1/2 4	0 6 0	0 5 0—Sept. 17, 1887.
1024	Wheal Kitty (tin), Ury Lelant [S.E.]	1 7 2	8	8 1/2	31 0 0	1 0 0—Sept. 6, 1888.
448	Wheal Lovell (tin), Wendron	33 0 0	62	59 61	87 10 0	2 10 0—May 23, 1888.
1024	Wheal Mary Ann (lead), Menheniot [S.E.]	8 0 0	47 1/2	46 47	35 17 6	2 5 0—June 8, 1888.
80	Wheal Owles, St. Just, Cornwall	70 0 0	300	300	225 13 0	5 0 0—Aug. 20, 1888.
210	Wheal Reeth (tin), Ury Lelant	39 10 0	27 1/2	27 1/2	40 10 0	5 0 0—Aug. 23, 1882.
194	Wheal Seton (tin, copper), Camborne*	107 0 0	135	135	286 10 0	2 0 0—Oct. 12, 1887.
1024	Wheal Trevelyan (silver-lead), Liskeard [S.E.]	4 10 0	25	24 1/2 25 1/2	33 10 0	1 0 0—July 26, 1888.
1024	Wheal Trevelyan (tin, copper), Gwennap	11 2 6	1 1/2	1 1/2	10 2 6	0 7 6—Jan. 11, 1884.
4096	Wheal War (lead), St. Ives	1 0 0	3 1/2	3 1/2	2 12 6	0 2 6—Dec. 22, 1887.
6000	Wicklow (copper), Wicklow	5 0 0	40 1/2	30 1/2 3 1/2	30 5 6	1 10 0—July 16, 1888.

(* Dividends paid every two months. † Dividends paid every three months.)

FOREIGN MINES.

10000	Alten and Quamangen United (cop.), Norway	16 10 0	6	1	£4 5 0	£0 15 0—Nov. 21, 1888.
2464	Barras Burra (cop.), South Australia	5 0 0	135	xd	195 0 0	0 5 0—March 3, 1888.
12000	Cobre Copper Company (cop.), Cuba [S.E.]	40 0 0	42	39 41	86 12 0	1 0 0—Jan. 26, 1888.
10000	Copiapu Mining Company, Chile [S.E.]	16 0 0	12½	11½ 12½	5 13 0	0 10 0—March 19, 1888.
7000	English and Australian	5 0 0	1½		0 7 6	0 2 6—Feb. 23, 1888.
30000	General Mining Assoc., Nova Scotia [S.E.]	15 0 0	20	19 20	11 2 6	0 17 0—June 23, 1888.
10000	Linares (lead), Pozo Ancho, Spain [S.E.]	5 0 0	9½	9½ 9½	5 10 6	0 8 4—March 30, 1888.
10000	Lusitanian (of Portugal) [S.E.]	1 15 0	3½	3½	0 8 9	0 2 6—June 10, 1888.
10000	Marathon and New Granada [S.E.]	20 0 0	1	1	0 6 6	0 1 6—July 19, 1888.
10000	Portland (silver-lead), France [S.E.]	20 0 0	1	1	0 6 6	0 1 6—July 19, 1888.
7000	Royal Santiago (copper), Cuba [S.E.]	16 15 0	1	1½ 1½	33 0 0	1 5 0—July 12, 1884.
11000	St. John del Rey (Limited), Brazil	25 0 0	12	11 12	35 7 6	1 0 0—June 19, 1887.
43174	United Mexican (silver), Mexico [S.E.]	18 5 0	3	2½ 3½	1 16 6	0 4 0—Feb. 14, 1883.
188676	North British Australasian [S.E.]	1 0 0	3		0 31 0	0 1 2—Feb. 25, 1885.